DOCTORAL DISSERTATION SUBMITTED IN THE DEPARTMENT OF PSYCHOLOGY, ALIGARH MUSLIM UNIVERSITY, ALIGARH FROM 2000-2005

DISSERTATION

SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF

Master of Library & Information Science

By

SHAGUFTA PARWEEN SIDDIQUI
Roll No. 08-LSM-01
Enrolment No. GA 5738

Under the Supervision of

DR. M. MASOOM RAZA
(Reader)

DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE
ALIGARH MUSLIM UNIVERSITY
ALIGARH

2008-2009

ALIGARH MUSLIM UNIVERSITY, ALIGARH

DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE

Phone [E-mail : masoomr@ yahoo.com
EPBX : 2700916, 20-22, 26 Ext. 19/
Direct : 0571-2700039
Res. : 0571- 2501525
Mobile : 09719303275

Dr. M. Masoom Raza
Reader

Ref. No. .....
Dated 5/9/09

Certificate

This is to certify that **Ms. Shagufta Parween Siddiqui** *has completed her dissertation entitled* **"Citation Analysis of Doctoral Dissertation Submitted in Department of Psychology, AMU, Aligarh from 2000-2005"** *in partial fulfillment of the requirements for the award of the degree of* **Master of Library and Information Science (2008-09).** *She has conducted the work under my supervision and guidance.*

I deem it fit for submission.

(Dr. M. Masoom Raza)
Reader

CONTENTS

Acknowledgment

"In the name of ALLAH the most beneficient and merciful"

*"All praise to almighty **ALLAH**, the creator, cherisher, and sustainer of the world .He created man and taught him that which he knew not (Al-Quran). He is the most gracious and the most merciful to all His creators. He endured me with the requisite knowledge and ability to produce this piece of work. I bow down to Him, in gratitude with all humanity from the depth of my heart.*

*I feel immense pleasure to express my regards, deep sense of gratitude, heartful devotion and sincere thanks to my esteemed teacher and supervisor, **Dr. Mr. Masoom Raza, Reader,** Department of Library and Information Science, A.M.U., Aligarh, who despite of his busy schedule, provide me excellent guidance, motivation, constant help and keen interest in my dissertation, without whose untiring efforts and able guidance this work would have never taken the present shape. It was a great opportunity to work under his supervision.*

*I sincerely express my sense of gratitude to **Dr. Naushad Ali, P.M, Chairman,** Department of Library and Information Science, AMU Aligarh, for his benign guidance, inspiring, encouragement, and valuable suggestions at every stage during the course of my stay in department.*

*I pay my special thanks to honourable **Prof. Shabahat Husain, and Mr. Mustafa Zadi** Ex-chairman, Department of Library and Information Science, A.M.U., Aligarh, for his unfailing support, and guidance that is beyond the words.*

*I express my indebtness to all my other teachers, **(Ms.) Sudharama Haridasan, Reader, Mrs. Nishat Fatima, Sr. Lecturer,** and **Mr. Mehtab Alam Sr. Lecturer** for their moral encouragement, invaluable advice and affection they gave to me.*

I am thankful to "Almighty Allah" for giving me nice parents ***Mr. Anjum Parvez Siddiqui and Mrs. Shakila Bano*** *whose, care, sacrifice and sustained efforts have enable me to complete my studies acquire knowledge. Whatever I am today is because of their prayer, love and care, and endeavors. I can not give them anything in return except a heartful of love, affection and deep reverence.*

My humble feelings of gratitude are also to my sisters, ***Ms Shayeesta Parween and Ms Mariya Quibtya*** *brother* ***Mr S.A Sabri*** *which can not be expressed in words. They always gave me lots of love and affection, encouragement to achieve this goal and prayed for my success.*

I am also thankful to the staff of Seminar Library of the Department, especially ***Mr. S. Riaz Abbas ,Mr. Zahid Hasan,and Mr Sharik*** *(Incharge, Seminar Library), who have rendered great assistance to me in the collection of materials. My thanks are also due to the office staff for their help during the session.*

Words cannot express my deepest thanks to my respected seniors ***Md Sohail , Ashok Kumar Upadhyay and Md Imran*** *for their continuous support and help in all respects.*

I have no words to express my extreme thanks to my special friends ***Ali Raza, Babar Rais, , Fariya, Md Parvez ,Md Azeem, Naghma Asrar ,Shabnam Ghazi, and Saima Khatoon,*** *who always stood by me through thick and thin and for their care, co-operation, inspiring and moral support.*

I would also pay my special thanks and appreciation to all my classmates who saved me from lots of labour and turmoil by their continuous help, care, co-operation and help me in understanding this venture.

Last but not the least, I would like to pay my sincere thanks to ***Mr Nazim*** *for helping me in typing.*

Shagufta Parween Siddiqi

LIST OF TABLES

LIST OF FIGURES

Chapter-1

Psychology: An Introduction

CHAPTER-1

INTRODUCTION

1.1 ALIGARH MUSLIM UNIVERSITY

Aligarh Muslim University is a residential academic institution. It was established in 1875 by Sir Syed Ahmed Khan and in 1920. It was granted a status of Central University by an Act of Indian Parliament. It is located in the city of Aligarh, Uttar Pradesh, India. Modeled on the University of Cambridge, it was among the first institutions of higher learning set up during the British Raj. Originally it was Mohammedan Anglo Oriental College, which was founded by a great Muslim social reformer Sir Syed Ahmed Khan. Many prominent Muslim leaders, and Urdu writers and scholars of the subcontinent have graduated from the University. Aligarh Muslim University offers more than 250 courses in traditional and modern branch of Education. Sir Syed Ahmed Khan, a great social reformer of his age felt the need for modern education and started a school in 1875 which later became the Mohammedan Anglo Oriental College and finally Aligarh Muslim University in 1920. This is a premier Central University with several faculties and maintained institutions and draws students from all corners of the world, especially Africa, West Asia and South East Asia. In some courses, seats are reserved for students from SAARC and Commonwealth countries. The University is open to all irrespective of caste, creed, religion or gender.

Aligarh Muslim University is planning to set up five regional centers in the country which are Bhopal (Madhya Pradesh), Pune (Maharashtra), Murshidabad (West Bengal), Malappuram (Kerala) and Katihar (Bihar)."

Currently the University has almost thirty thousand students, and over two thousand faculty members with over eighty departments of study. It continues to function as a premiere educational institution in India, and draws students from a number of countries, especially countries in Africa, West Asia and South East Asia. In some courses, seats are reserved for students from SAARC and Commonwealth countries.

1.2 DEPARTMENT OF PSYCHOLOGY

1.2.1 Brief Introduction

The department of Psychology was established in 1964-65. The department offers high quality degree courses leading to B.A(Hons) in Psychology and M.A in Psychology with field specialization in clinical Psychology, and Organizational Behavior. Students are admitted to Ph.D. courses in the fields of Applied Psychology: Cognitive Psychology, Personality and Social Psychology, Clinical Psychology, Industrial Psychology and Organizational Psychology/HRD, and Health Psychology.

Psychology is one of the growing areas which have a chequered history starting from a very theoretical philosophical approach passing through experimental and empirical assessment of behavior to its applied dimension and now, to professionalizing Psychology in general.

World today, is realizing the immense importance of Psychology in almost every walk of life where there is a man for maximizing the utilization of human potentials and resources for quality improvement of environment and human life. There are numerous significant areas where psychologists with their professional training and acumen can play important role but in

view of the contemporary challenges our department foresees to equip the Department.

1.2.2 Thrust Areas

- Applied Personality and Social Psychology
- Clinical Psychology
- Industrial Psychology/ Organizational Psychology
- Health Psychology
- Childhood Disorder
- Positive Psychology

1.3 PSYCHOLOGY: INTRODUCTION

1.3.1 What is Psychology?

The word Psychology came from the two Greek words, "psyche" and "logos" which literally translate to the study of the soul and later on it progress to the study of the mind. Today many authors would define psychology as the scientific study of behaviour and mental processes.

Most people use the term 'psychology' to mean a subject which is concerned with the understanding of the human mind and its activities. It is a widely held belief that psychologists can read the minds of others and understand what is going on in their minds. While this is the view of the layperson, scientists in the field of psychology, however, do not accept this definition. Today scientific psychology is generally defined as the science of

behaviour. The term 'behaviour' is employed in a very inclusive and comprehensive sense. The difference between the layperson's definition of psychology as the science of the mind and the scientific definition of psychology as a science of behavior.

A few decades ago even scientific psychologists defined psychology as the study of the mind. Soon, however, it was found that defining psychology as the field concerned with the study of the mind created certain problems. The term 'mind' was derived from philosophy. This was felt to be undesirable when psychology decided that it should join the family of natural sciences. Secondly, acceptance of the concept of mind resulted in several questions like what is the mind, where is the mind and so on. The concept of the mind turned out to be rather abstract and therefore, not suitable for scientific study. In view of this, in the first part of this century, psychologists decided to drop the term 'mind' and adopt the term 'behaviour'. Two outstanding psychologists who initiated this change were William McDougall and John Broadus Watson. These two psychologists expressed the view that psychology should concern itself with the actual behaviour of organisms, both human and animals, because behaviour is something concrete, factual and observable, unlike the mind. This move was generally welcomed and over the years, a consensus has emerged in defining psychology as the study of the behaviour of living organisms. This change or transition from 'mind' to 'behaviour', however, was neither smooth nor simple. Some people stressed that only the observable activities of living organisms should be considered as behaviour. People who subscribed to this view were not in favour of using terms like thinking, feeling, remembering etc. because these were not directly observable. In brief, these psychologists held the view that only movements of the muscles, changes brought about

by glands and other organs of the human body constituted human behaviour. This view was advanced with vehemence by John Watson, the founder of the School of Behaviourism in psychology. Perhaps, such an extreme view is not held by anybody today. Nevertheless, the emphasis on observability and the role of the body in defining behaviour is still prevalent among large sections of psychologists though they cannot be called faithful followers of Watson. A second group of psychologists hold the view that the term 'behaviour' should include not only observable behaviour but also the unobservable inner activities and processes. According to this view, terms like thinking, feeling and remembering can be used with perfect legitimacy. Some among this group go even beyond this and emphasize unconscious processes which are not only not observable by others but are unknown even to the person himself or herself. In contemporary psychology, unconscious processes are emphasized by a large number of psychologists. The emphasis on unconscious processes was first laid by Sigmund Freud. But one can refer to many more controversies and divergences of opinion which over the years have become narrow as research and understanding has increased. Today there is sufficient agreement, if not unanimity, in defining psychology as the science of behaviour as also in the understanding of the term behaviour, which is now used to include the observable, unobservable and inferred behaviour of the organism. It is difficult to define behaviour briefly. It is easier to describe the nature and characteristics of behaviour. Most psychologists have, therefore, concentrated on the description of behaviour rather than on its definition, and at this point consider some of the characteristics of behaviour.

1.4 DEFINITION OF PSYCHOLOGY

Psychology is the description and explanation of state of consciousness as such and it is a science of behavior.

1.4.1 According to Howieson and Jackson

"Psychology can be broadly defined as the investigation of human and animal behavior and of the mental and physiological process associated with behavior".

1.4.2 From the *Concise Oxford Dictionary*

- The scientific study of the human mind and its functions, esp. those affecting behavior in a given context.
- A treatise on or theory of this.
- The mental characteristics or attitude of a person or group.
- The mental factors governing a situation or activity (*the psychology of crime*).

Definition 1 has slyly added the idea of "affecting behavior". The original definition had nothing to do with this. The wish to control the minds and actions of others has entered into the equation.

1.4.3 From the *American Heritage Dictionary*:

1. The science that deals with mental processes and behavior.
2. The emotional and behavioral characteristics of an individual or group.

These definitions have further altered the true meaning. In actual practice, modern psychology deals almost exclusively with physiology (brain chemistry, neurology, genetics) and the behavior of the biological organism (stimulus response), completely

disregarding and ignoring the mind (man's inner self, and more to the point, man's true and vital self). The dictionaries will sooner or later remove the concept of "mind" completely from the definition following the lead of "official" psychology as taught in western universities and colleges.

1.5 THE HISTORY OF PSYCHOLOGY

For thousands of years psychology existed under the name of philosophy. The Hindu *Vedas* contain the oldest record of man's examination of mind and spirit. In India all forms of *Yoga*, which are essentially psychology, are described as one of the six systems of philosophy. *Sufi teachings*, which again are chiefly psychological, are regarded as partly religious and partly metaphysical. In more modern times some version of these systems, still largely following in this same vein, can be found the subjects of Rosicrucianism, New Thought, Science of Mind, visualization techniques, practical magic, and Scientology.

If you found yourself flinching or reacting negatively to the mention of any of these subjects, such as Yoga, Rosicrucianism, Scientology, or any of the many other alternative approaches to the mind and reality, realize this is not necessarily because there is anything actually strange or weird about these subjects. It is often largely because modern psychology, psychiatry and affiliated proponents of modern materialistic "science" have successfully applied black PR to them to such a large degree. In fact, they have covertly attacked these subjects for most of this century. An intelligent and objective look into any of these fields, although

sometimes initially confusing largely due to the newness of the subject and difference in approach to reality will result in a widened understanding of you (and Man in general). Granted, you do need to and in fact you must weed out some of the nonsense often added to these subjects. Once you do take an honest look though it should become very obvious that modern western psychology has little to do with that incredible universe that exists a few inches behind your forehead. It must be mentioned that over time most of these subjects and fields (i.e. Scientology, Rosicrucianism, Transcendental Meditation, etc) have most definitely suffered from some combination of a) gross alterations introduced by self-appointed leaders following internal power struggles, b) manipulation of views and information by the more influential members, c) the sad tendency of some of the not-too-bright members to dictate changes not part of the original information, and d) the use of the subject and field to exert thought control and behavioral manipulation on its members. These faults are observably true and easily seen in the recent history of Scientology, though these faults exist in all too some degree. Lastly though, don't throw out the baby with the bathwater. While these all have serious flaws, don't use that as an excuse to dismiss everything about them outright without any serious examination. It takes careful and serious examination to separate the valuable from the invaluable and there are often much of both to be found.

The mind has been examined, studied, drilled and "expanded", at times to the point of excruciating detail within many fields (i.e. Tibetan Buddhist Yogic practices). This is not to say that due to language barriers and the passage of time, that the information has not been lost to minor or major degrees or that these studies weren't without many errors, serious flaws, biases

and differing opinions to start with. The point is not whether any of these are perfect studies (none are) or whether any of them have completed the task of researching the mind (none have), but that the possibility for such a study most surely exists, has been done before in various ways and to differing degrees, and that modern psychology (and psychiatry) has nothing to do with this field.

1.6 HISTORY OF INDIAN PSYCHOLOGY

The term Indian Psychology refers to the psychologically relevant materials in ancient Indian thought. Usually this term does not cover modern developments in Psychology in India.

Modern Psychology at the beginning of the century emphasized sensation, perception and psychologists in India took out Indian theories of sensation and perception from the classics and created an Indian Psychology. For example Indian theories emphasize the notion that in perception the mind goes out through the senses and assumes the shape of the objects. In 1934, Jadunath Sinha wrote a book on Indian theories of perception. As soon as Western Psychologists started studying cognition, Indian Psychologists started looking for Indian theories of cognition. In 1958, Jadunath Sinha wrote a book on Cognition. Later on modern Psychology started emphasizing emotions, and in 1981, Jadunath Sinha wrote a book on Emotions and the Will.

The major part of ancient Indian scriptures (Hindu, Buddhist and Jain) emphasizes self realization, samadhi or nirvana. After

1960 Humanistic Psychology emerged and Psychologists became interested in paranormal dimensions of growth. Maslow's theory of self-actualization and transcendental self-actualization established the link to the major part of ancient Indian theories and methods and almost the whole of ancient Indian writings became psychologically relevant. Psychology of Consciousness, Parapsychology, Psychology of Mysticism, Psychology of Religion and Transpersonal Psychology borrow extensively from Indian writings. The terms Oriental Psychology, Buddhist Psychology, Yoga Psychology, Jain Psychology, etc. are frequently found in modern psychological literature now. Many book lists in Psychology now include books on Yoga, Buddhism and Zen. There seems to be a paradigm shift in Western Psychology, a shift from the notion of mental disease and healing to personal growth, the reference point shifting from the statistical average or "normal" to the ideal or upper limits of man's potentiality.

The rudiments of the theory of consciousness can be traced back to the Indus valley civilization (6000 to 1500 B.C.). Artifacts of a man sitting in Padmasana have been obtained in excavations. The Swasthika symbol was used in Indus valley script. Buddhist thought and methods (6th century B.C.) are in line with the objective spirit of modern science and the law of parsimony of science and Buddhism can be easily incorporated into a scientific framework. The Psychological relevance of the four noble truths and eight-fold path and Sunya vada of Buddhism and Buddhist techniques of meditation are of considerable relevance in modern Psychology. Similarly Jain scriptures also are found to be relevant to Psychology in more than one way. The Vedas date from about 1500 B.C. However, Upanishads (appendices to the Vedas, which date from 600 B.C.) which describe the Vedanta philosophy and

provide the theoretical foundation of Jnana Yoga are of more direct relevance to Psychology. The Bhagavat Gita gives a quintessence of Indian way of life and philosophy and it describes the four yogas, Karma, Bhakthi, Raja and Jnana. Several books have come on the psychological relevance of Gita. Maslow's theory of Meta-motivation is very similar to the concept of Nishkama karma outlined in the Gita.

Patanjali's Ashtanga Yoga is a very systematic presentation of Raja yoga. Both Bhagavat Gita and Ashtanga Yoga are supposed to have been written around the turn of B.C. to A.D. Sankara's writings (8th century A.D.) on the different yogas as well as his Advaita philosophy are considered as classics in the area and are of great value to the Psychology of consciousness as well as personal growth. Modern interest in relaxation can be traced to studies on Savasana. Rising popularity of meditation practice links Psychology to Oriental religious practices and philosophy.

Indian literature on aspects of consciousness is vast, considering the classics and their commentaries. Mental states have been analyzed, classified and differentiated in detail. Similarly paranormal powers (siddhis) have been classified in detail. The processes of personal growth and obstacles to growth have been examined thoroughly. There is a great deal of maturity resulting from long experience in these areas reflected in the writings. Indian theories of linguistics, social behavior, crime, etc. are all based on the holistic approach and the broad based intuitive understanding of behavior in contradistinction to Western theories which are piece-meal, analytic and situation specific. The increasing importance given to the holistic approach and need for synthesis

makes it possible to integrate modern Western Psychology with ancient Indian thoughts as well as methods.

The psychosomatic relationship was well known and salient in ancient times. The very first invocatory stanza of Ashtangahridaya (the main text in Ayurveda, written in 4th century A.D.) describes how emotions like desires lead to both physical and mental diseases.

Many attempts are being made to integrate ancient Indian Psychology with modern Western Psychology. More than 40 books have appeared in the field of Indian Psychology. There is a journal of Indian Psychology published from Andhra University which has an Institute of Yoga and Consciousness. At least five persons have developed personality inventories based on the Triguna theory (Satwa, Rajas and Tamas) of Kapila (Sankhya philosophy, 6th century B.C.

1.7 NATURE OF THE SUBJECT PSYCHOLOGY

It is an accepted reality that the nature of the subject psychology is quite scientific. This fact has been properly recognized by the eminent psychologists and thinkers as may be inferred out of the definitions of psychology. Let us try to demonstrate why the subject psychology should be called as a science. In general, we may call the nature of a subject scientific, if it fulfils the following criteria:

- Possesses a body of facts and is able to support it through universal laws and principles.
- Emphasizes on search for truth.
- Does not believe in hearsay, stereotypes or superstitions.

- Believes in cause and effect relationship.
- Adopts the method of objectives investigation, systematic and controlled observation and scientific approach.
- Stands for the generalization, verifiability and modifications of the observed results or deduced phenomena.
- Helps in predicting the future developments.
- Is able to turn its theory into practice by having its applied aspect.

1.8 SCOPE OF PSYCHOLOGY

The scope of a subject can usually be discussed under the following two heads:

- Te limit of its operations.
- The branches, topics and the subject matter with which it deals.

The field of operation and applications of the subject psychology is too vast. It studies, describes and explains the 'behavior' and 'living organisms' carry unusual wide meanings. Behavior is to be used to include all types of life activities and experiences whether co native. Cognitive or effective, implicit or explicit, conscious, unconscious or sub conscious of a living organism. On the other hand, the term living organism is to be employed to all the living creatures created by the almighty irrespective of their species, caste, color, age, and sex, mental or physical state. Thus normal, abnormal, children, adolescents, youth, adults, old parents, consumers and producers belonging to different stock, spheres and walk of human life all are studied in the subject psychology. Moreover, the studies in psychology do not limit themselves to the

study of human behavior only but also try to encircle the behavior of the animals, insects, bird and even plant life.

In this way, where there seems some life and we have living organisms, psychology may be needed for the study of the activities and experiences of these living organisms. We know that the living organism as well as their life activities is countless and consequently, no limit can be imposed upon the fields of the operations and implications of the subject psychology.

1.9 BRANCHES AND FIELD OF PSYCHOLOGY

The subject matter of the subject psychology can be grouped into different branches for the shake of convenience and specialized study. First, we divide it into two broad categories, namely, Pure Psychology and Applied Psychology

1.9.1 Branches of Pure Psychology

1. General Psychology
2. Abnormal Psychology
3. Social Psychology
4. Experimental Psychology
5. Physiological Psychology
6. Para- Psychology
7. Geo- Psychology
8. Development Psychology

1.9.2 Branches of Applied Psychology

1. Educational psychology
2. Clinical psychology
3. Industrial psychology

4. Legal psychology
5. Military psychology
6. Political psychology

1.10 UTILITY OF PSYCHOLOGY

1.10.1 In the field of Education

Psychology has contributed a great deal towards the improvement of the process and products of education. It has helped in the assessment of natural abilities and acquired characteristics. Theories of learning, motivation and personality have been responsible for shaping designing the educational system according to the needs and requirements of the students. The application of psychology in the field of education has helped the learners to learn, teachers to teach administer and educational planners to plan efficiently and effectively.

1.10.2 In The Field Of Medicine

Psychology has proved it worth's in the field of medicine and cure. A doctor, nurse or any person who attend the patients needs to know the science of behavior to achieve good results. Behavior counts much more than the medicines and this behavior can only be learnt through psychology. The belief that sickness whether physical or mental may be caused. Physiological factors have necessitated the use of physiology. It has removed a lot of superstitions in the diagnosis as well as cure of mental and physical sickness. Psychology has contributed valuable therapeutic measures like behavior therapy, group therapy, shock therapy, psychoanalysis, etc, for the diagnosis and cure pf patients suffering from psychosomatics as well as mental diseases.

Psychology is the legitimate child of his mother philosophy. How ever, with the passage of time its nature has undergone a change from sheer speculation to the scientific procedure. Defined first as the study of soul in its history of evolution, it has been known gradually as the study of mind, study of consciousness and finally study of behavior.

REFERENCES

1. James William (1890), The Principles of Psychology: *An internet resource developed by Christopher D. Green, York University, Toronto, pp.230-240.*
2. American Psychiatric Association (2000), Diagnostic and statistical manual of mental disorders, 4th ed., Author Washington D.C, pp.250-267.
3. Baddeley, A. D. (2003)," Is working memory working? ", *Quarterly Journal of Experimental Psychology,* Vol.44, No.1,pp. 1-31.
4. Engle, R. W., Cantor, J., & Carullo, J. J. (1997)," Individual differences in working memory and comprehension: A test of four hypotheses", *Journal of Experimental Psychology: Learning, Memory, and Cognition,* Vol.19, No.1, pp.992-972.
5. Mathew. V .George, PhD (2004, "*A Short History of Indian Psychology," Indian Journal of Social Psychology,* Vol.12, No.1, pp.121-232.
6. Everett, J. J., Smith, R. E., & Williams, K. D. (2002)," Effects of team cohesion and identifiably on social loafing in relay swimming performance", *International Journal of Sport Psychology,* Vol.23, No.1, pp.311-324.
7. Ferster, C. B. & Skinner, B. F. (2004). *Schedules of reinforcement,* Appleton-Century-Crofts, New York, pp.24-34.

8. Goldringer, S. D. (2006). "Words and voices: Episodic traces in spoken word identification and recognition memory", *Journal of Experimental Psychology: Learning, Memory, and Cognition*, Vol.22, No.1, pp.1166-1183.

WEB SOURCES

1. *en.wikipedia.org/wiki/Aligarh_Muslim_University*
2. www.psychology.org/
3. www.splut.com/sub/g/general-phsycology.html
4. *www.psychologytoday.com/*

Chapter-2

Citation Analysis: Definition, Importance, Application & Limitations

CHAPTER-2

CITATION ANALYSIS: DEFINITION, IMPORTANCE, APPLICATION AND LIMITATIONS

2.1 INTRODUCTION

The exponential growth of the production of all types of literature in the last few decades has caused librarians and bibliographers to look for quantitative and statistical methods to keep track of the flood of information.

Historically the beginning of the use of statistical techniques were in 1917 by E.J.Cole and N.B.Eales, who conducted a study by counting and categorizing publications by country of origin and by field.

Allan Pritchard in 1969 coined the term "Bibliometrics" which can be defined, in simple words as quantitative or numeral or statistical analysis of recorded communication.

2.2 DEFINITION OF BIBLIOMETRICS

2.2.1 According to Allan Pritchard[1]

Bibliometrics is "The application of mathematical methods to books and other media of communication."

Thus bibliometrics is a formed scientific sub-discipline including the complex of mathematical and statistical methods used to analyse bibliographical characteristics of documents.

Hence, the term bibliometrics has a very recent origin. The term "Librametrics', scientiometrics' and 'Informatics' are also in use in the literature. Bibliometrics is analogous to S.R.Ranganathan's 'Librametrics' Russian concept 'Scientometrics' FID's 'Informetrics' and also to some other well established sub disciplines like 'Econometrics' 'Psychometrics' 'Sociometrics' and 'Biometrics'.

2.2.2 Applications of Bibliometrics / Bibliometric Techniques

At the basis of all bibliometrics research there is a collection of "document representations" usually in the form of references to pervious woks or citations from later publications. The compilation, arrangement, tabulation, and analysis of these document representations provide the framework for the bibliometric study. According to F.Narin, "The most active area of modern bibliometrics is concerned with citations". Boosted by the computer with the data storage capabilities and the successful marketing of citation indexes, research has proliferated concerning the use and nature of citations.

2.3 CITATION ANALYSIS

2.3.1 Introduction

A scientific paper does not standalone but it is embedded in the literature of the subject. The nature of this embedding is specified by the use of toot-notes and / or reference lists. The fact that a document is mentioned in a reference list indicates that in the author's mind there is a

relationship between a part or the whole of the cited document and a part or the cited document and a part or the whole of the citing document, citation analysis is that area of bibliometric which deals with the study of these relationships. The basic tool for this kind of study is a citation index, which is an ordered list of cited documents.

Citation analysis is a generic term for a set of well-known techniques that have a long history in bibliometrics studies of scholarly communication. As an artifact of the scholarly communication process, citations can reveal formal communication patterns.

Citation analysis is a non-intrusive method of finding patterns in a specific population's use of research materials, when one author cites another author, a relationship is established. Citation analysis uses citations in scholarly works to establish links. Many different links can be ascertained, such as links between authors, between scholarly works, between journals, between fields, or even between countries. Citations both from and to a certain document may be studied. One very common use of citation analysis is to determine the impact of a single author on a given field by counting the number of times the author has been cited by others. Citation analyses permits researchers to see how frequently a work has been cited in articles and is an invaluable tool for any literature review.

Thus citations are bibliographical references which are usually appended with every research communication. When a document refers to another document, the later is called

the cited document, and the former the citing document. Brief description about the cited document is known as citation, which includes name of the author, document, pages, year of publication, places etc. The pattern of citation also differs from publication to publication. The citations are also called references, readings and they may appear as endnotes as well as footnotes.

Citations are 'frozen footprints' in the sands of scholarly achievements or the 'signposts' left behind when the information is utilized. A reference is the acknowledgement that one document gives to another and a citation is the acknowledgement that one document receives from another. Thus there is an implied relationship between the cited document and the citing document. This assumption has led to a number of studies focusing on citation counts, impact factor, bibliography coupling, co-citations and citation indexes.

Citations in journals explicitly state a connection between two documents, one which cites and the other which is cited, whereas citation of secondary journals does not usually imply any connection between documents. The citation analysis is largely used for putting things in order. The things ordered can be journals, articles, books, authors, organizations etc. The type of ordering can be linear or in ranking or multidimensional, as in citation networks. Studies of obsolescence rates of journals or documents may be considered to be special cases of ranking.

Citation counts are frequently taken to be a measure of use of journals. Validity of this assumption is, of course, often challenged since many journals that are borrowed are not read (and many journals that are not borrowed are read within the library) and much of what is read is not necessarily cited. Also this assumption leads to a problem of the definition of use. The "use" is often taken to mean "borrowing frequency" and there is no clear evidence that citation frequency correlates with borrowing frequency.

Citation directs our attention to something already existing that is, it means to cite, or quote or refer. It is a specific reference to a work from which the text is quoting, or showing its source as an authority for a statement or idea. In one way the author transfers the authority about an idea to someone else.

One may ask why authors cite. The answers can be many: as a reference for further study, acknowledge the quote, appreciate a related work, suggest another work for comparison, and prove a statement, and so on. In fact all this may indicate that there is a similarity between a text and the references that are cited. And this supposed similarity has led to many studies. By this method of analyzing the cited list of references one can evaluate the citations received by articles, authors, institutions and other aggregates of scientific activities.

Citation analysis has conquered the world of science policy analysis. Aggregates of citations are commonly used in evaluation studies as indicators for the "impact" of

publications, as one of the measures of the 'quality' of research groups or even of individual researchers. Co citation maps of scientific specialties and also increasingly citation patterns among journals are used to describe the development of disciplines and specialties, and to identify emerging areas of 'Scientific inquiry'.

In the beginning, citation counts were used to determine the importance of journals. This method focused purely on statistical and quantitative nature and completely ignored the qualitative aspect of a work. This approach was gradually discarded when analysis started examining the citations more closely. It may be concluded that citation analysis is a method based on the principle that articles citing the same references have also much of their content in common. Similarity between an article and the articles on its reference list is one of the cornerstones of citation analysis. Thus, a qualitative dimension of citation analysis had now been increasingly emphasized.

2.4 DEFINITION OF CITATION ANALYSIS

Citation analysis is a technique of bibliometric study of literature based upon some degree of relationship between citing and cited articles or documents.

2.4.1 According to E. Garfield[2]

"Citation frequency is measure of research activity or of communication about research activity".

2.4.2 According to J.Martyn[3]

"Citation analysis of the citation of references which form part of scholarly apparatus of primary communication".

2.4.3 According to E.C.White[4]

"Citation analysis plays a prominent role for easy identification of earlier research".

2.4.4 According to J.C.Baughman[5]

"It is a systematic enquiry into the structural properties of the subject".

2.5 HISTORICAL BACKGROUND OF CITATION ANALYSIS

The origin of footnote or citation practice is not new and also has been well established in scientific writings even when the early periodicals started about three century's ago.D.J. de sola price has found out that the earliest name of a footnote was 'Scholia', which means "relating to scholarship". This is an indication that the practice of footnoting was considered to be a scholarly practice.

Citations have their own origins in the referencing practices of researchers and writers. The concept of identification of the source of an idea or quotation developed during the Renaissance after the invention of printing. In England, the copyright Act of 1709 provided protection of literary property and established a precedent for the enactment of copyright laws in all countries, culminating in

1886 in the development of the principles of international copyright. The precise origin of the use of footnotes or references is obscure. The earliest example provided in the Oxford English Dictionary is William Savage's A Dictionary of the Art of Printing (1841), containing eighty-eighty "Bottom notes also termed as Footnotes".

The first practical application of this concept was Sheperd's citation, a legal reference tool that has been in used since 1873. to try a case under store Devises, a lawyer must base arguments on previous decisions, however, the lawyer must make sure that the decision have not been overruled reversed or limited in some way. Sheperd's citation enables the lawyer to do this with a minimum of trouble. Taking advantages of coding system, frank Shepard devised a listing with every instance in which reported decision is cited in a subsequent case. The listing also shows what statutes and journal cite the original decision. Using Sheperd's citation, a lawyer must first locate a previous decision relating to his current case. He, this by consulting a digest, index or encyclopedia which will provide him with the case member of any given decision. The lawyers then looks up the case number in Sheperd citations and find all subsequent citing cases. From the information, he can determine whether the original decision was affirmed or modified in any way.

2.5.1 Welch Medical Library Indexing Project

In 1952, Dr. Chauncey Leake was chairman of committee of consultants for the study of indexes to medical

literature. This committee was supervising the John Hopkins Welch Medical Library Indexing project which was sponsored by the Armed Forces Medical Library.

2.5.2 Eugene Garfield[6]

Eugene Garfield one of the Welch project investors realizes that nearly every sentence in a review article is supported by a citation to a previous work. Thus, a review article could really be considered as a series of indexing statement. The problem then becomes one of transforming these statements into a consistent format that would be useful as an index.

2.5.3 Genetic Citation Indexing

In 1961, the National Institute of Health Initiated a cooperative programmed with Garfield's Institute for Scientific Information (ISI) to prepare a citation index for the field of Genetics.

Garfield soon recognized, however that defining the genetics literature to be covered by a citation index would be quite difficult. Fine judgments would be required as to what was or was not genetics literature. As Garfield's suggestion, it was decided to undertake a comprehensive interdisciplinary approach to preparing a citation index and then extract a genetics citations index from that base of information.

2.5.4 Science Citation Index

Taking the due from the legal literature and the usefulness of the Shepard Index, Eugene Garfield has been advocating, since 1950s, for such an index in the field of science and technology. He made some experimental studies and in 1961 brought out an experimental science citation index. Since 1964 Garfield's institution, the Institute for Scientific Information at Philadelphia, has been regularly bringing out the Science Citation Index (SCI). It started, in 1964, with coverage of 700 periodicals and all US patents. In 1969 the number of source journals crossed the 2000 marks. Initially it had only two parts: citation index, and the source index. Later on, since the year 1966, a third part called permuterm index was also introduced. Today the web based version of that index covers 5,000 journals across more than 150 scientific disciplines.

The science citation index expanded format, available through the **Web of Science** and the online version, **SciSearch**, cover more than 5, 8000 journals.

2.5.5 Social Science Citation Index

A great landmark took place in 1972 when ISI started publishing social science citation index, which provides access to current and retrospective bibliographic information author abstract and cited references found in over 1700 of the World's leading scholarly social science journals covering more than 50 disciplines.

2.5.6 Arts and Humanities Citation Index

The ISI Arts Humanities citation index provides access to current and retrospective bibliographic information and cited references found in over 1,120 of the World's leading Arts and Humanities journals.

2.5.7 Derwent Innovation Index

The Derwent innovation Index, available through ISI web of Science Interface, is a web accessible product that merges the Derwent World patent index with the Derwent patent Citation Index. Updated weekly it covers over 10 million basic invention and 18 million patents in all form over 40 patent issuing authorities.

2.6 CONCEPT AND DEVELOPMENT

The concept of citation analysis had been existing under different names. The word Bibliometrics the other name of citation analysis was first coined by Pritchard in 1969 to mean "an application of mathematical and statistical method to books and other media process of written communication and of the nature and course of a discipline".

Cole and Eales in their work "The History of Comparative anatomy in 1917 has used the expression *'Statistical Analysis' has been used, studied the contribution* in the field of anatomy by counting the number of publications produced by different countries, covering a period from 1543 to 1860 which was regarded as the first

counting technique in evaluating the international scientific activities.

P.L.K.Gross and E.M.Gross in 1927 used citation count to rank the periodicals in chemistry which was regarded as the first user study of any significance based on a more systematic citation count that later became that basic and methodological direction to the Bradford's Law of Scattering.

In 1948, Ranganathan coined the term 'Librametry' to connote the use of statistics to evaluate an existing or proposed library service and resources.

2.8 PURPOSE

Citations are used to access the value, quality, impact, and penetration, originality visibility of individual and corporate performance within and across disciplines. Major motivations of authors behind using references as listed below:

1. Paying homage to pioneers;
2. Giving credit for related work;
3. Identifying methodology, equipment etc.
4. providing background reading;

5. correcting one's own work;

6. correcting the work of others;

7. criticizing the work of others;

8. alerting researchers to forthcoming work;

9. substantiating claims;

10. providing leads to poorly disseminated, poorly indexed or uncited work;

11. authenticating data and classes of fact physical constants, etc;

12. disclaiming work or ideas of others;

13. dispoputing priority claims of others

14. identifying original publications in which an idea or concept was discussed;

15. identifying the original publication describing an eponymy concept or term;

2.9 DIMENSIONS OF CITATION ANALYSIS

There are a number of different approaches to citation analysis. Basic concepts of citation analysis that provide for study and research include:

i. **Direct Citation:** which establishes the relationship between document and the researchers who use them Direct citation is a technique that determines how many citations a given document, author, journal etc, has received over a period of time. The rationale for this is that citation are objective indicators of use and therefore an article, author journal that is frequently

cited is more useful or productive, as the case may be, than one that is less frequently cited.

ii. **Bibliographic Coupling:** The relation of two documents by virtue of their joint descent from the third. The concept of bibliographic coupling was first elaborated, tested and coined by M.M.Kessler[7] It is a number of *common references cited in two documents that* indicates the degree of similarity of contents of the citing papers. Two source documents containing a large number of common references are said to have a high coupling strength and are likely to be on the same topic. It links two papers that cite the same article, so that if papers. A and B both cited paper C, they may be said to be related, even though they don't directly cite each other. The more papers they both cite, the stronger their relationship is. It is observed that the concept of relationship has certain drawbacks and not seem to be a valid unit of measurement because of two papers are citing a third paper, they may or may not be citing an identical piece of information of third paper being cited. The fact that two papers have a reference in common is no guarantee that both papers are referring to the same piece of information. So, it is merely an indication of the existence of probability of relation between two documents.

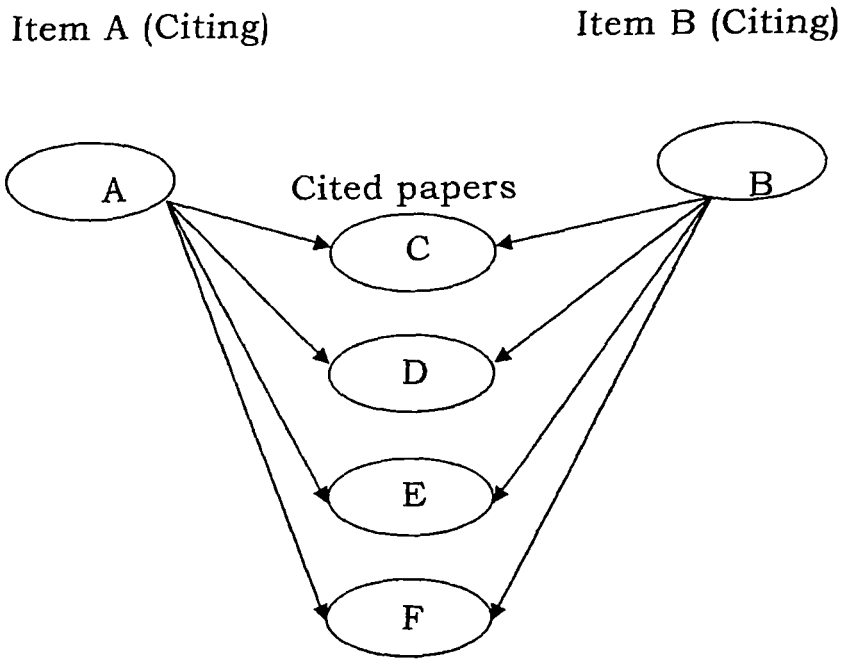


Fig.: Bibliographic Coupling

iii. Co-citation Coupling: The concept of co-citation was for the first developed by H.small[8] who proposed a new method of analyzing citations to generate clusters of related papers. The numbers of times two papers are cited together in subsequent literature determine the co-citation strength of two cited papers. It is a method used to establish a subject similarity between two documents. It papers A and B are both cited by paper C, they may be said to be related to one another, even though they don't directly cite each others. If paper A and B are both cited by many other papers, they have a stronger relationship. The more papers they are cited by, the stronger their relationship is. Co-citation is dynamic measure in that co-citation strength of cited papers can be studied over a period of time as they continue to be cited together in subsequent literature.

One of disadvantage of co-citation techniques is that, it requires comprehensive citation data.

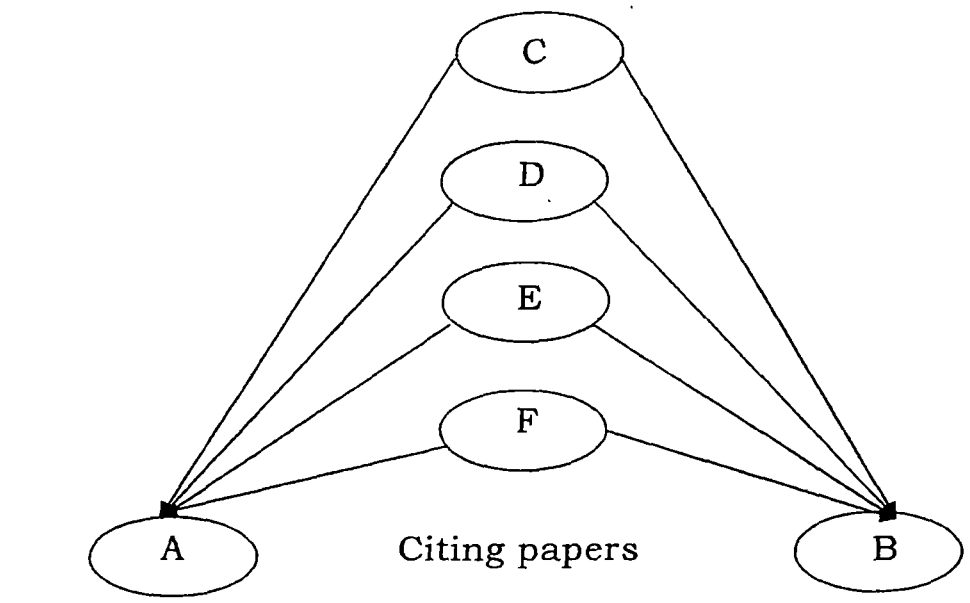


Fig. Co-citation coupling

Garfield explains that the strength of co-citation can be calculated using the following formula.

$$S = \frac{C0 - ciation\, of\ A+B}{(total\ citations\ of\ A+B) - (Co - citation\, of\ A+B)}$$

2.10 APPLICATIONS OF CITATION ANALYSIS

Citation analysis can be applied for various studies

(a) Library and information oriented studies, instances of which are visible in: rates of use of library materials, and rank ordered of listing of journals;

(b) Science oriented studies as seen in network determination through co-citation and clustering;

(c) Modeling of the historical development of science and technology;

(d) Management oriented studies; this can be visualized in evaluation of productivity studies in terms of productivity studies in terms of citation analysis.

(e) Information search and retrieval

2.11 TECHNIQUES USED IN CITATION ANALYSIS

Citation analysis itself is a bibliometric technique in which works cited in publications are examined to determine patterns of scholarly communication. A lot of survey and studies have been done in the area of citation analysis. The techniques used in analysis of citations mostly are as follows:

i. Obsolescence

The term obsolescence also means no life or half-life documents, or no longer in use. This technique of obsolescence has been specifically used in confirming or rejecting the idea that document use or value declines with

its age. That is, a document may become of least use after some time of their appearance for reasons, i.e. the information is valid, but incorporated in later works; the information is valid, but superseded by later work; the information is valid but is in a field of declining interest; the information is no longer considered valid.

ii. Clustering

This is a technique, which with the help of citation analysis, tries to link different groups of documents with similar citations. Clusters are formed when an article (a member of the cluster) has coupling link with at least another member. No member of one cluster would have link with a member of another separate cluster.

iii. Half Life

The time during which one half of all the currently active literature was published. This literature becomes 'unused', but not 'unusable'. Unlike radio active decay it does not become 'disintegrated but obsolescent.

- **Cited Half – Life : Journal**

The number of journal publication years going back from the current year which account for 50% of the total citations received by the cited journal in the current year.

iv. Scattering (Bibliographic)

The name Scattering or more specifically bibliographic scattering is used to devote the phenomenon of

inhomogeneous clustering of bibliographic items e.g. articles, citations, word, frequencies etc over their sources e.g. Journals, cited articles etc. The scattering distributions are usually skewed and non-Gaussian Major bibliographic scattering phenomena are the journal scattering and citation scattering.

v. *Citation Chasing*

A legitimate research technique in which the bibliographies of works already located in a literature search are examined ("mined") for additional sources containing further information on the topic. The process can be facilitated by using a citation index.

vi. Impact Factor

The idea of journal impact factor was first mentioned by Eugene Garfield in 1955. He created the journal impact factor to help select journals for the science citation index.

This refers to the impact of a journal, not of an article; when a journal is analyzed for its productivity, the total number of items published by the journal influence the number of items it is cited; the more it is published greater the number of opportunities it has of being cited. This is evident more so in large size of journals, than in the small one, as large journal has more articles. To get a correct impact factor, the analysis must show the average citation rate per item in a journal. This is derived by dividing the number of items the journal has been cited by the number of items it has been published. If a journal publishes only a few

articles each year, it cannot influence many other researchers and writers, and it will not be cited very often. The long impact of a journal can be assessed by the total number of citations received overall, or in a given year. The formula for computing the 1995 impact factor for a given journal.

Impact factor for 1995=

$$\frac{\text{(Number of citations received in 1995 to 1993 and 1994 articles)}}{\text{Number of articles published in 1993 and 1994}}$$

Therefore IF= the number of times a journal was cited / the number of citable items the journal published

The impact factor reflects the impact of an average article published in the journal; it normalizes the number of citations, and it does not discriminate among journals. It measures not so much the impact of a journal, but the impact of the typical article appearing in the journal. A journal can have a high impact factor; but because it publishes only a few articles each year or it has just commenced publication, it may have a very small overall influence on the scholarly community.

vii. Citation Index

A citation index is an ordered list of cited articles which is accompanied by a list of citing articles. The cited article is identified as a reference and the citing article as a source. The association of ideas existing between the cited and citing

articles is utilized in the preparation of this index. It may perhaps be said that cited articles are, ancestors and the citing articles are descendents and this descending relation of subject is reflected through the index.

It is a three part index in which works cited during a given year are listed alphabetically by name of author cited, *followed by the names of the citing authors (sources) in a* "citation index". Full bibliographic information for the citing author is given in a "Source Index." Also provided is a "Subject Index," Also provided is a "Subject Index," usually listing articles by significant words in the title. Researchers can use this tool to trace interconnections among authors citing papers on the same topic and to determine the frequency with which a specific work is cited by others, an indication of its significance in the literature of the field.

Citation indexing originated in 1961 when Eugene Garfield, received grant to produce the experimental genetics citation index, which evolved into the reference serial science citation index.

Citation indexing is a relatively new method of organizing the contents of a collection of documents in a way that overcomes many of the shortcomings of the more traditional indexing method. The primary advantage of citation indexing is that it identifies relationship between documents that are often over looked in a subject index. An important secondary advantage is that the compilation of citation indexes is especially well studied in the use of man machine indexing method that do not require indexers who

are subject specialists. This helps to make citation current than most subject indexes. Furthermore citations which are bibliographic descriptions of document are not valuable to scientific and technological obsolescence as are that the terms used in subject indexes.

viii. Immediacy Index

This is a method of showing how rapidly the materials published by a journal are picked up and used. It measures the extent to which articles make a quick impact on readers the timeliness or currency of the journal. Historical journals would presumably have low immediacy indexes; cutting edge medical journals could have relatively high immediacy indexes. One would expect e-journals to have high immediacy indexes, since speed of publication is one of the most often cited advantages of e-journals. It is calculated by counting the numbers of citations received by articles in a journal during the year in which they were published.

1995 immediacy index for a given journal

$$\frac{\text{(Number of citations received in 1995 to 1995 articles)}}{\text{Number of 1995 articles}}$$

2.12 NEED OF CITATION ANALYSIS

A plethora of knowledge is being unfolded everyday. This situation of overwhelming mass of available information is been devoted by information explosion. It is a common knowledge that during the present generation more science related information has been produced than in the past:

This is because of the ever specialization and diversification of knowledge, need of distinguishing oneself in academic circles and increasing numbers of printed or recorded information in various forms.

Today the information available in books, articles, in periodicals, abstracting and indexing periodicals, conference proceedings, seminar papers bibliographic databases has grown phenomenally.

Cost is another factor for concern. It is said that even a very rich library like the library of congress of the USA, whose budget is in several corers of rupees, will not be able to procure each and every document that is being published from different parts of the world and in the different forms and languages. Therefore to avoid difficulties created by the inflation on the one hand and the Shrinking fund position on the other, a purposeful study of evaluating the types of literature and of selecting periodicals according to their use value is of immediate interest and need. The universe of knowledge demands is multidimensional and ever-changing. Therefore the evaluation of literature of a sample is essential and has been practice of librarianship citation analysis is helpful to the organization of knowledge from which discipline the journal deals.

2.13 IMPORTANCE OF CITATION ANALYSIS

The primary function of citation is to provide a connection between two documents, one which cites and the other which is cited. It is largely used for putting things in

order. The things ordered can be journals, paper in journal, authors of papers in journals or organizations to which authors of journal papers are affiliated. The type of order can be linear, as in ranking, or multidimensional as in the generation of citation networks.

Citation analysis is very often fruitfully applied to derive the following benefits:

a. To lead the Reader to further studies in the field

This is perhaps the primary purpose of citations. Readers can verify the correctness of the information and thereby convince themselves.

b. For the preparation of bibliographies

The first use of citation indexing was made in Shepherd's Citations published in 1873. This technique of citation indexing has been perfected by Eugene Garfield and others since the early 1960s. It is a fact that compilation of bibliographies in new fields is really difficult. In such circumstances, analysis of citations of articles may be the only way to gather information. The very fact that the citations have been verified evaluated and recommended by authors who are experts in their own fields make them all the more acceptable for inclusion in a bibliography.

c. To study the use pattern of different types of documents

Citations given may be of books, journal articles, reports, standards, theses/dissertations etc. The relative use of each of these types can be ascertained based on the frequency of citations. For example, various citation studies have shown that journal articles are the most preferred source consulted by scientists since they constitute about 70 - 80 % of the total citations. Similarly citation practices among social scientists indicate that they give equal importance to books and journals.

d. To find out the relative use of different languages

Since English has emerged as a world language, especially in science and technology, there is a predominance of English language publications in all branches. This can easily be understood from citation analysis. In the mid-sixties, for instance, the share of English language papers in Mathematics and Chemistry was more then 50%. Russian occupied the second position with about 20% followed by German and French.

Citation practices have also shown that the relative amount of literature in different subjects produced by different countries changes with time. It has been observed that German has declined very much in the 20th century, especially in the field of Chemistry where publications in this language reigned supreme.

e. To study the use of literature from different countries

From the citations, the country of their origin can be identified in all types of materials like journal articles, books, reports etc. In many subject areas, U.S Publication is found to be used more heavily. In medicine, biochemistry, physiology and pharmacology, the leading role is played by U.S journals. Journals of U.K occupied the second position, but they come nowhere near their American counterparts in the frequency of use. Some of the user studies in India have shown that Indian publications are also equally cited in certain subjects.

f. To study the scattering of subjects

Studies about the dispersion or scattering of subjects in different sources as evidenced by citation analysis have brought out interesting results. For example:

I. Social science and arts subjects show a wider scatter of publication than the science.

II. Research publications in technology show a greater dispersion than those in science.

III. A new branch of science, especially an interdisciplinary one, shows a greater dispersion than an older branch of science.

IV. There can be differences in scattering between sub-fields within a subject as also among major subjects.

V. The rate of scatter within the same subject alters with time.

g. To decide the obsolescence rate of documents in different subjects

Citations in subsequent literature and usage pattern in libraries are considered as two indicators of the obsolescence of literature. Analysis of citations by age of the cited document can show the useful life of a document. In order to measure the decay or obsolescence rate of documents, the concept of 'half life' has been borrowed from Nuclear Physics. The fast growing subjects would have lesser half-lives compared to established disciplines. These time scales are highly useful in the planning of library holding.

h. To determine the interdependence and lineage of subjects

The interdependence of basic and applied fields can be understood by citation studies. Establishment of this interdependence can be of use in the acquisition policy of special libraries or information centers. The analysis of citations of the Annual Review of Medicine for the year 1965-69 by Sengupta, I.N.[15] has established the contribution made by journals in the fields of biochemistry and physiology to the medical research. Further studies by him have brought to light the mutual contribution of biochemistry, physiology and microbiology.

i. To prepare ranked list of periodicals

Ranked list of periodicals can be prepared by two methods:

By actual citation counting; and by counting the number of entries in indexing and abstracting periodicals.

In the first method, information is collected from the references cited in source articles. By studying the average number of citations, one can develop a list of cited journals in the ranked order.

In the second method, the number of items contributed by different periodicals during a specific period of time is calculated from the secondary source and the ranked list is prepared based on the productivity of journals. Such ranked lists are very often used as guidelines in the acquisition of periodicals as other materials in the library.

j. To study the rate of collaborative research

Collaborative research can be effectively measured from the number of authors in papers. Such studies can be conducted to understand global trends, national trends or trends in different subjects. Studies in this direction have indicated that collaboration varies from discipline to discipline, within the same discipline from time to time, and from country to country. However, the extent of collaboration may not be revealed from the citations.

k. For the analysis of scientific journals

Citation analysis provides a number of interesting and useful insights into the networking of journals. These

insights are develop from five different citation measures, which perfected by Institute for Scientific Information (ISI)

i. Citation rate of a journal

This is the number of times a journal has been cited It can consist of all the references to the cited journal, counting even duplicate references from the same source article as a separate. It can also be calculated by counting only the number source of sources articles that cited the journal. A third method of calculating citation rate that is followed by ISI is by counting the number of references to the cited journal, but treating duplicate references from the same source article as only a single citation links.

ii. Self-cited rate

This, again, is a measurement of self-citation. It shows what percentage of citations received by a journal originated in articles published by the journal. These self-Citation rates serve as indexes to newness, size and isolation of the intellectual universe in which a journal operates.

2.14 LIMITATIONS OF CITATION ANALYSIS

Generally, all studies using citation and co-citation analyses suffer from two major limitations: the assumptions which underline citation analyses, and the problem with the sources of citation data. A number of factors limit the importance of citation data.

(i) Negative citation i.e. citing a paper just to repudiate it. The result is that controversial papers will get more citations than really worthwhile papers.

(ii) Too much of self citation and in house citation: while papers are written by a single author, the elimination of self citation is easy; but a further checking may be needed for multi-authored papers. The elimination of group self citation is the more difficult problem.

(iii) Incomplete record of the workings of the information system.

(iv) Lack of rationale behind citing to enable direct application of the data.

(v) Some authors miss to cite, or ignore the debt of a citation and do not cite.

(vi) Citing behavior is not uniform in all publications and subjects, e.g. sciences, Social Science.

(vii) Thus items, advertisements, letter statistical bulletins, etc. are never cited, indicating another characteristics bias in citing.

(viii) The number of citations provided by each publication varies enormously, so it is difficult to estimate the total number of citations that will be generated by a given number of sources.

(ix) Location and identifying a citation is not always straight forward.

(x) Citations come in various forms and are described differently (reference, bibliography notes, readings)

(xi) Citations may be found in the text of the document at the foot of the relevant page, in a letter, accompanying or diagram or at the end of the article or document.

(xii) Practice or citing only to get the favor of the powerful or to appease others.

(xiii) Problem of multiple Authorship: The citation indexes include only the first named authors of cited articles.

(xiv) Problem of Homographs or Homonyms: to differentiate among many scientists with the same name and initials publishing in the field extra information such as institutional affiliation is needed otherwise citation could be incorrectly attributed to an author, particularly he/she has a common name, and even this problem is more difficult with Chinese or Japanese names than with English names.

(xv) Problem of synonyms is also there. Until establishing a standard form for the author's name citation will be scattered. A woman's maiden and married names different treatment of foreign names and misspelling.

(xvi) Citation data should not be too restricted in time, while there may be large variations in citation counts from one year to another.

2.15 WEB APPLICATIONS OF CITATION ANALYSIS

Recently a new growth area in bibliometrics/citation analysis has been emerging field of webometrics, or cybermetrics as it is often called. Webometrics can be defined as using of bibliometric techniques in order to study the relationship of different sites on the World Wide Web. Such techniques may also be used to map out (called "Scientific mapping" in traditional bibliometric research) areas of the web that appear to be most useful or influential, based on the number of timed they are hyperlinked to other websites.

Citation analysis is the examination of the frequency and pattern of citations in articles and books. Due to unprecedented growth of electronic resource (e-resource) availability and online access to computer science. Literature leads to higher citation rates. As more and more scholarly documents become available in electronic form through the World Wide Web their use as sources in citation analysis is expected to increase in near future.

REFERENCES

1. Pritchard, A. (1969), "Statistical bibliography or bibliometrics", *Journal of Documentation,* Vol. 25, No.2 pp. 348-349.

2. Garfield, E. (1977), "Citation frequency as a measure of research activity and performance", *Current contents*, Vol. 31, No2. 5, pp. 5-7.

3. Martyn, J. (1975), "Citation analysis", *Journal of Documentation,* vol. 31 No. 4, pp. 250-297.

4. White, E.C. (1985), "Bibliometrics: from Curiosity to convention", *Special Libraries,* Vol. 76 No. 1, pp. 32-38.

5. Baughman, J.C. (1974), "A structure analysis of the literature of Sociology", *Library Quarterly,* Vol. 44, No.4 pp. 293-308.

6. Garfield, E. (1964), "Science Citation Index: a new dimension in indexing", *Science,* Vol. 144, No.2 pp. 649-654.

7. Kessler, M.M. (1963), "Bibliographic coupling between Scientific papers", *American Documentation,* Vol. 14, No. 1, pp. 10-11.

8. Small, H. (1973), "Co-citation in the scientific literature: a new measure of the relationship between

two documents", *Journal of the American Society for Information Science,* Vol. 24, No. 3, pp. 265-269.

9. Maheshwarappa, B.S. (1997), "Bibliometric: An Overview", in Devrajan, G. (ed.), *Bibliometric Studies,* Ess, New Delhi, pp. 25-32.

10. Ibid, pp. 228.

11. Taher, M. (1997), Studies in Librarianship, Anmol Publications, New Delhi, pp. 9-12.

12. Ibid, pp. 45-47.

13. Ibid, pp. 71-84.

14. Tiwari, A. (2006), Bibliometric Informetrics and Scientometrics: Opening New Vistas of Information Science, RBSA publications, Jaipur, pp. 7-29.

15. Guha, B. (2005), *Documentation and Information: Services Techniques and Systems,* World Press, Kolkata, pp. 257-282.

16. Ravi Chandra Rao, I.K. (1983), Quantitative Methods for Library and Information Science, Wiley Eastern, New Delhi, pp. 194-201.

17. Hertzen, D.H. (2003), "Bibliometric history", in Drake, M.A. (Eds.), *Encyclopedia of Library and Information Science,* 2nd ed., Marcel Dekker, New York, Vol.1, pp. 317-322.

Chapter-3

Review of Related Literature

CHAPTER-3

REVIEW OF RELATED LITERATURE

Review of related literature is very essential for a new research topic. The study of related literature implies locating, reacting and evaluating reports of researches as well as reports of the casual observation and opinion that are related to the individual planned research project. In any worthwhile study in a field of research, the researcher must have an adequate knowledge with the work that has already been done in the area of his research. The researcher must have up to date information about what has been done in the area of his research. In brief this chapter presents an overall review of studies conducted abroad as well as in India in a chronological order regarding the topic. The investigator reviewed only those studies, which were similar to the present study.

Roohani Saeed and Xianming Zhao (2009)[1] discusses under the title "Xbrl Citation Analysis: A Decade of Progress and Puzzle'. The main objective of this paper is to examine a decade (1998-2008) of articles published in various publications including academic journals to identify trends and patterns. Another goal is to assess public perceptions of XBRL, its capabilities and its future. The finding of this study covers over 3,300 XBRL citations where XBRL appeared either in the title or abstract of the article during 1998-2008 periods. Considering that XBRL reporting is required by most sec filers starting in 2009, the academic

community has been proactive in assessing this new reporting standard and there is a trail of research to document.

Johnson Bill (2009)[2] *m*ade a study under the title "Environmental Impact: A preliminary citation analysis of local faculty in a new academic program in environmental and human health applied to collection development in an academic library". The purpose of this study is to characterize the citation patterns of the interdisciplinary field of environmental and human health as compared with other disciplines and to apply the results to collection development. Twenty-four articles were selected from 1996 and 1997 with over 1600 citations to more than 950 listed references. The average age of citations was 10.5 years for journals and 9.4 years for books. On an average, journals were cited 67% of the time while books were cited 17% of the time. Proceedings, theses, and technical reports were also cited but that data was not applied to collection development. The impact on collection development has been to identify a small number of specific books which were frequently cited but were not in the collection and to identify important subject terms with which to guide the selection of related books. Finally, 12 new subscriptions to frequently cited journals will be reviewed with faculty to determine their suitability as additions to the collection.

Labonte Kristen B. (2009)[3]conducted study under the title of citation analysis: A method for collection development for a rapidly developing field", science and technology

librarianship citation analysis was used to determine if the sciences-engineering library at the university of California at Santa Barbara is meeting the needs of an interdisciplinary group of 60 faculty members at the new California Nan systems institute. The latest three publications of each faculty member (published within the last two years) were analyzed in two ways using the science citation index: 1) the journals they were published in, and 2) the journals where cited articles were published. The results indicate that the library subscribes to 98 percent of the journals in which faculty members are published or are citing frequently. This information is useful to map the citation patterns of a new interdisciplinary field and can be used for future collection management decisions

Koley & Sen (2008)[4] conducted a study under the title "Impact Factor: A Controversial Way Of Journals And Research Quality Measurement" covering 457 citations appended to 26 research articles published in the four issues of the quarterly Indian journal of physiology and allied sciences Of the citations, 76.81% relate to journal articles, 18.59% to monographs, and the rest to conference papers, theses, etc.

Bhatt & Sampath Kumar (2008)[5] discuss under the title of "A Citation Analysis of Research Articles from Scholarly Electronic Journals Published In 2000-2006". The analysis focused on the extent to which scholars are using web-based sources in scholarly electronic journals. Results of the study shows that 81.49% of articles published in

selected 9 electronic journals during 2000-2006 have web references. Out of 25,730 references 56.54 % of references are print journal references and 43.52% of them are web references.

Noruzi, A. (2007)[6] carried out a study under the title "The web Impact factor: a critical review". The purpose of this article is to analyse link based web site impact measure known as web impact factor (WIF), it is a quantitative tool for evaluating and ranking websites, top level domains and sub-domains A key to webometric studies has been the use of large scale search engines, such as Yahoo! And Alta Vista that allow measurements to be made of the total number of pages in a web site and the total number of backbones to the web site. This paper reviews how the WIF has been developed and applied. It has been suggested that web impact factors can be calculated as a way of comparing the attractiveness of web sites or domains on the web. It is concluded that, while WIF is arguably useful for quantitative intra-country comparison, application beyond this i.e. to inter country assessment has little value. The paper offers a critical review of literature on the WIF and associated indicators.

Donohue, J.C. (2007)[7] carried out a study under the title "A bibliometric analysis of certain information science literature". In the analysis of single corpus of journal articles relating to information science, several bibliometric techniques previously applied to separate scientific literature were used techniques included were (a) Bradford

analysis (b) epidemic analysis (c) identification of research front and (d) bibliographic coupling. Similar analysis was made of writings cited by the main corpus. The results were analyzed in terms of structure and processes observable in patterns of authorship publications and citation then significance is discussed with potential application of the method to the solution of the problems in the management of large research libraries.

Haridasan, S. and Kulkshrestha, V.K. (2007)[8] conducted a study under the title "Citation analysis of Scholarly Communication in the journal knowledge organization". The purpose of the study is to understand the information needs, use pattern and use behavior of library and information Science researchers particularly engaged in the field of knowledge organization the study is limited to nine years, i.e. 1993-2001 the model citation index of the journal is analyzed using the first seven core authors the data relating to all the references appended to the articles during the period under study were collected and tabulated. The findings show that the average number of citations is around 21 per article the major source of information are books and documents published during the later half of the century (1982-91) Authors from the USA, UK and Germany are the major contributors to the journal India is ranked seventh in terms of contributions. Ranking of periodicals helps to identify the core periodicals cited in the journal knowledge organization ranking of authors in done to know the eminent personalities in the subject, whose work is used by the authors to refine their ideas on the subject or topic.

Model citation index for the first seven most cited authors was worked out it reveals the historical relationship of cited and citing documents. This model citation index can be used to identify, the most cited authors as researchers currently working on special problems, to determine whether a paper has been cited, whether, there has been a review of a subject, whether a concept has been applied, a theory confirmed or a method improved.

Nebelony-Bonnevie, E. and Frandsen, T.F. (2006)[9] made a study under the title "Journal citation identity and Journal citation image: a portrait of the journal of Documentation". The basis objective of this study is to propose a multiple set of journal evaluation indicators using methods and theories from author analysis. These include journal citation identity and the journal citation image. The study is based on bibliometric study using the two indicators, e.g. on analysis of references in journal articles and journal co-citation analysis. The finding reveals that the journal of documentation, which is portrayed in this study, is characterized by high impact and high visibility. Compared to other journals in the same field it published a relatively low number of documents with scientific content. It reaches far into the scientific community and belong stop a field that is more and more visible. The journal is relatively closely bounded to Western Europe, which is an increasing tendency. The multiple set of indicators give rise to a journal evaluation of a more qualitative nature, journal citation identity and journal citation image indicators

contribute in giving a more detailed multifaceted picture of a single journal.

Yang, H. (2005)[10] carried out the study under the title "The features of papers and citation analysis of eleven journals in tropical medicine indexed by Science citation Index Expanded". The study analyzed the original articles, editorials, reviews, corrections, letters, biographies, and news published in these journals. The avenge number of reference was 23.05 of which highest reference were from periodical followed by Price Index and then Self citing rate. This results show that Brazil, United States, India and England are more advanced in tropical medicine research. The conclusion reveals that these journals covered most research done in these countries or regions. Most researches were done by cooperation of the researchers but many of the publications used outdated articles and should include newer information.

Frandsen, T.F. (2005)[11] conducted a study under the title "Journal interaction: A bibliometric analysis of economics Journals". The purpose of this paper is to use citation analysis to add insight into the interaction between economics journals. It uses a method of citation analysis using multiple linear regressions on both cited and citing economics journals. This proposed method controls for the different characteristics of the journals as well as for their degree of interaction. The study reveals some of the hidden structures within the science of economics that are determinants for the results from citation analysis. The

analysis indicates several underlying factors within citation patterns in economics that should be accounted for when closing citation analysis for evaluation purposes. A journal is to a large extent self supplying with citation but, when this is extracted from the data, journals are dependent on similar journals with respect to sub-discipline, geography to supply citations. An analysis of both cited and citing journals may help to determine which factors should be taken into account in the evaluation. It enables one to analyse some of the characteristics that separate the sciences.

Haycock, L.A. (2004)[12] undertook a study with the title "citation analysis of education dissertation for collection development" under which prepared the reference list of 43 education dissertations on curriculum and Instruction completed at the university of Minnesota during 2000-2002 to inform collection development, as one of the indicator of use of the academic library collection. The citation analysis yielded data to help in journal selection retention and cancellation decisions. The project aimed to ensure that the most frequently cited journals were retained on subscription. The ratio of serial and monograph for citation was evaluated in comparison with others studies and explored in the context of funding ratios. Results of citation studies provide a basis for selection decisions and serve as a model for other libraries.

Dulle, F.W., Lwehabura, M.J.F., Matovelo, D.S. and Mulimila, R.T. (2004)[13] carried out a study under the title "Creating a Core journal Collection for agricultural research in Tanzania: citation analysis and user opinion techniques. The major objective of this study is to analyse the citation patterns of agricultural scientists in Tanzania. The specific objectives are to (i) establish a list of core agricultural journals for agricultural researchers in Tanzania using citation analysis and user opinions (ii) assess researchers' access to information as reflected form citation analysis, and (iii) to find out the extent to which the available information resources meet the research needs. It presents the analysis of 295 M.Sc. Theses and 21 Ph.D. theses submitted at Sokone University of Agriculture between 1989-1999 and 309 conferencing proceeding articles. The study reveals that generally agricultural scientists in the country had limited access to current journals.

Aksnes, D.W. (2003)[14] conducted a study under the title "A macro study of self citation". The purpose of the study is to investigate the role of self citation in the scientific production of Norway (1981-1996). The study analysis more than 45000 publications, using a 3 year citation. A large number of all citations represents author self citations. However this number decreases when citations are traced for longer periods. The highest share of self citations is found among the least cited papers. The study reveals that there is a strong positive correlation between the number of self citations and the number of authors of the publications. For multi-authored papers, only a minor part of the overall

increase in citation rate is due to self citations. The results are relevant for the discussion concerning use of citation indicators in researcher assessment.

Huang, H. (2003)[15] made a study under the title "The relationship of journal productivity and citation: In the case of the Library and Information Science in Taiwan." With the main objective of not only to establish the characteristics of the Library and Information Science periodical literature in Taiwan by using bibliometric method, but also to employ the relationship between of the citing journal articles and the article productivity. The results of the study show that; after 1970, the library and information science periodical literature in Taiwan had been growing stably and since 1992, there are numerous articles produced by the same author was becoming popular. This relationship is examined by employing the measures Pearson's correlation coefficient and Spearman's Rank correlation coefficient. The outcome stated that they are positively and highly related with its citation and usage level.

Bordons, M., Fernandez, M.T. and Gomez, I. (2002)[16] conducted a study under the title "Advantages and limitations in the use of impact factor measures for the assessment of research performance in a peripheral country" as a part of an issue comprising selected papers of the special day session at the 8th International Conference on Scientometrics and Informatics held in Sydney (Australia) on 17 July 2001 the study describes the use of impact factor based indicators for the analysis of Spanish

Scientific production. It shows the usefulness of IF measures and their ready to use measures. The results also reveal several limitations such as the need to avoid inter field comparison or the convenience of using a fixed journal set for international comparisons.

Biradar, B.S. and Sampath Kumar, B.T. (2002)[17] carried out a study under the title "Chemical technology Literature: an obsolescence study". The objective of the study is to identify the use of periodical literature. It aims to examine in the light of obsolescence of Literature, Annual Aging Factor (AAF), Mean Life (ML) and utility factor (UF) of periodicals in the field of Chemistry. References to the articles published in Indian Journal of chemical Technology during the year 1994, 1997 and 1999 were collected obsolescence of the literature studies and half life of the literature was also calculated.

Yeh, N. (2002)[18] conducted a study under the title "Impact factor: a controversial way of journals and research quality measurement". The study proposed the method of calculating the impact factor of periodicals and the idea that the reputation of the periodical is valid. The dispute which occurs while calculating impact factor are also discussed for example, the author of this paper examines some other possible ways of substitution for academic research evaluation. The trend of academic research evaluation is based on the impact factors of the periodical which published the research articles; however, the quantitative measure of research has many flaws. The study concludes

that impact factor is an imperfect factor; the author hopes that the government or research institution will regard the appropriateness of assessing the quality of the periodicals and whether the scientists contribute to academic progress or not move foreign academic communities have redesigned new evaluation standards and have already given up using the impact factor formula. The study recommends that the practice in Taiwan should evaluate critically the quality of each individual article.

Zhiqiang, W. (2001)[19] conducted a study under the title "Investigations on the accessibility of Online Citations in Chinese academic Journals". The study explains the importance of online citations and their accessibilities. The objective of the study is to investigate the accessibility of online citations in academic papers of two Chinese core journals from 1999 to 2003 to find out (i) the relationship between online citations accessibility and time (ii) the academic papers with lots of online citations (iii) the relationship between online citations accessibility and website (iv) language and protocol (v) the distribution of inaccessible online citations (vi) the retrieval of inaccessible or uncertain online citations.

Maharana, B., Kalpana, N. and Sahu, N.K. (2001)[20] conducted a study under the title "Scholarly use of web resources in LIS research: a citation analysis". The essential purpose of thus paper is to measure the amount of web resources used for scholarly contributions in the area of Library and Information Science (LIS) in India. It further

aims to make an analysis of the nature and type of web resources, and studies the various standards for web citations. In this study the result of analysis of certain web citations spread in different scholarly papers published in the proceedings of the National conference of the society for Information Sciences, India (SIS-2005) has been reported. All the web citations were scanned and data relating to types of web domains, file formats, styles of citations etc were collected. The data analyzed revealed that out of total citations a considerable number of web citations proving a significant correlation between the use of internet resources and research productivity of LIS professionals in India. The highest number of web citations was from .edu/.ac type domains. Most of the web resources cited in the study was hypertext markup language (HTML) files.

Sinn, R.N. (2001)[21] made a study under the title "A Local citation analysis of Mathematical and Statistical dissertations". A comparative study of citation analysis of the 1980-2002 mathematics and statistics dissertations at Ohio University and citation analysis of other Science at disciplines published in the Literature was made. Mathematics and statistics students were found to use the journal literature less frequently than highly research oriented fields like chemistry and biology and more frequently than applied fields like engineering and computer sciences. On examining the title dispersion the same general trend among the disciplines was seen. Mathematics and statistics used more journal titles than chemistry and fewer journal titles, then engineering. The study can be

helpful for collection manager to protect a larger core journal collection for mathematics and to keep monograph purchasing at an adequate level.

Williams, V.K. and Fletcher, C.L. (2000)[22] conducted a study under the title "Materials used by master's Students in Engineering and Implications for Collection Development: A Citation Analysis". The purpose of the study is to determine the materials used by graduate students in engineering and to guide Library collection development decisions. The author identified engineering master's theses accepted at Mississippi State University (MSU) from 2000-2004 for inclusion in this study. Two hundred fifty theses, with a total of 9,340 citations represented eight engineering disciplines. This case study found that journals were the commonly cited format overall, they comprised more than forty percent of citations in only two of the eight disciplines studied. The data also shows that books retain their value for research longer than journals and conference proceedings. Core journals lists are developed by total citations and by number of citing authors. Variations among engineering disciplines were identified, including variations in format, age and subject classification of journals.

La Bonte, K.B. (2000)[23] conducted a study under the title "Citation Analysis: A method for collection Development for a rapidly Developing field" used citation analysis to investigate whether the Sciences. Engineering Library at University of California at Santa Barbara (UCSB) is meeting the needs of the recently established the California

Nanosystems Institute CNSI. It was aimed at developing a core list of journals that should be added to the collections in the Sciences engineering Library at UCSB. The latest three publications of each faculty member, published within the last two years were analyzed in two ways using the Science citation Index (i) The journals they were published in, (ii) The journals where cited articles were published. The results indicate that the Library Subscribes to 98 percent of the journals in which faculty members are published or are citing frequently. This information is useful to map the citation 'patterns of new interdisciplinary field and can be used for future collection management decisions.

Small, H. (2000)[24] made a study under the title "why authors think their papers are highly cited" under this a survey of authors of highly cited papers in 22 fields was undertaken in connection with a new bibliometrics resource called essential science indicators (esi) authors were asked to give their opinions on why their papers are highly cited. They generally responded by describing specific internal technical aspect of their work, relating them to external or social factors in their fields of study. These self perceptions provide clues to the factors that lead to high citation rate, and the importance of the interaction between internal and external factors. Internal factors are revealed by the technical terminology used to describe the work, and how it is situated in the problem domain for the field. External factors are revealed by a different vocabulary describing how the work has been received within the field, or its implications for a wider audience. Each author's response

regarding a highly cited work was analyzed or four dimensions (i) the authors perception of its novelty (ii) utility (iii) significance and (iv) interest, the most socially based dimensions, was most often paired with one of the other more internal dimensions, suggesting a synergy between internals and external factors.

Walcott (2000)[25] examined journal article citation patterns to uncover the interdisciplinary nature of scientific disciplines such as marine science, chemistry, and biochemistry respectively. According to the literature, citation analysis has been used by librarians in various disciplines to eliminate costly low use/unused journals, purchase needed materials and ascertain core journals needed for patron use and to reveal the most active research in a particular area. The present study builds on previous studies and seeks to use this method to aid in collection development in the area of chemistry. Ideally, examination of past material use (particularly journals) should suggest future material use by chemistry doctoral students.

Miettumen, J. and Nieminen, P. (2000)[26] conducted a study under the title "The effect of statistical methods and study reporting characteristics on the number of citation: a study of four general Psychiatric Journals." The study investigates how the use of different statistical method and study design characteristics affected the number of citation in psychiatric journals. Original research articles from four psychiatric journals were reviewed. The study identified the use of statistical methodology presentation of results,

description of procedure, country of the corresponding authors and number of authors. For further utilization of an article the use of statistical method was not strongly association. The effect was low compared to the compact of corresponding address or numbers of author. An experimental study design and an extended description of statistical procedures had a positive effort to the reviewed citation.

REFERENCES

1. Saeed Roohani and Zhao Xianming (2009), "Xbrl Citation Analysis: A Decade of Progress and Puzzle", *Journal of American Medicine Association*, Vol.293, No.19, pp. 298-320.

2. Bill Johnson (2009), "Environmental Impact: A preliminary citation analysis of local faculty in a new academic program in environmental and human health applied to collection development in an academic library", *Library Philosophy and Practice,* Vol. 2, No.2, pp.242-482.

3. Kristen B.Labonte (2009),"Citation Analysis: A method for collection development for a rapidly developing field", Science and Technology Librarianship, Vol.45, No.1, pp. 266-340.

4. Koley and Sen (2008), "Impact Factor: A Controversial Way", Journals and Research Quality Measurement, Vol.112, No.4, pp. 542-651.

5. Bhatt & Sampath Kumar (2008), "A citation analysis of research articles from scholarly electronic journals published in 2000-2006", Journal of Library Information Science, Vol.88, No.2, pp. 212-176.

6. Noruzi, A. (2007), "The Web If: A Critical Review", *Electronic Library,* Vol. 24, No. 4, pp. 490-500.

7. Donohue, J.C. (2007), "A Bibliometric Analysis of Certain Information Science Literature", *Journal of the American*

Society for Information Science, Vol. 23, No. 5, pp. 313-317.

8. Haridasan, S. and kulshrestha, V.K. (2007), "Citation Analysis of Scholarly Communication in the Journal Knowledge Organization", *Knowledge Organization*, Vol. 56, No. 4, pp. 299-310.

9. Nebelong-Bonneview, E. and Frandsen, T.F. (2006), "Journal Citation Identify and Journal Citation Image: A Portrait of the Journal of Documentation", *Journal of Documentation*, Vol. 62 No. 1, pp. 385-401.

10. Yang, H (2005), "The features of papers and citation analysis of eleven journals in tropical medicine", Science American Medical Review, Vol. 25, No. 1, pp. 23-41.

11. Frandsen, T.F. (2005), "Journal Interaction: A Bibliometric Analysis of Economics Journals", *Journal of Documentation*, Vol. 61, No. 3, pp. 385-401.

12. Haycock, L.A. (2004), "Citation Analysis of Education Dissertation for Collection Development", *Library Resources and Technical Services*, Vol. 48, No. 2, pp. 102-106.

13. Dulle, F.W., Lwehabura, M.J.F., Matovelo, D.S. and Mulimila, R.T. (2004), "Creating a Core Journals Collection for Agricultural Research in Tanzania: Citation Analysis and User Opinion Techniques", *Library Review*, Vol. 53 No. 5, pp. 270-277.

14. Aksnes, D.W. (2003), "A macro study of self citation", *Scientometrics*, Vol. 56, No. 2, pp. 235-246.

15. Huang, H.M. (2003), "The Relationship of Journal Productivity and Citations: In The Case Of Library and Information", *Bulletin of the Library Association of China*, Vol. 20, No. 1, pp. 209-225.

16. Bordons, M., Fernandez, M.T. and Gomez, I. (2002), "Advantages and Limitations in the Use of Impact Factor Measures for the Assessment of Research Performance in A Peripheral Country", *Scientometrics*, Vol. 53 No. 2, pp. 195-206.

17. Biradar, B.S. and Sampath Kumar, B.T. (2002), "Chemical Technology Literature: An Obsolescence Study", *Annals of Library and Information Studies*, Vol. 50 No. 4, pp. 156-162.

18. Yeh, N. (2002), "Impact Factor: A Controversial Way of Journals and Research Quality Measurement", *Journal of Library and Information Science*, Vol. 31 No. 1, pp. 54-62.

19. Zhiqiang, WU (2001), "Investigations on the Accessibility of Online Citation in Chinese Academic Journals", *Journal of the China Society for Scientific and Technical Information*, Vol. 25 No.1, pp. 80-86.

20. Mahrana, B., Kalpana, N. and Sahu, N.K. (2001), "scholarly use of web resources in lies research: A Citation Analysis, *Library Review,* Vol. 55 No. 9, pp. 598-607.

21. Sinn, R.N. (2001), "A Local Citation Analysis of Mathematical and Statistical Dissertations", *Science and Technology Libraries*, Vol. 25, No. 4, pp. 274-285.

22. Williams, V.K. and Fletches, C.L. (2000), "Materials Used by Master's Students in Engineering and Implications for Collection Development: A Citation Analysis", *Issues in Science and Technology Librarianship*, Vol. 45, No.4, pp. 340-520.

23. La Bonte, K.B. (2000), "Citation Analysis: A Method for Collection Development for A Rapidly Developing Field", *Issue in Science and Technology Librarianship*, Vol. 44,No.2, pp.51-60

24. Small, H. (2000), "Why Authors Think Their Papers Are Highly Cited", *Scientometrics*, Vol. 60 No. 3, pp. 305-316.

25. Walcott (2000), "Citation analysis as a tool", *Journal evaluation Science 1972*, Vol. 178, No. 4060 (3 November):471-479.

26. Mie Humen, J. and Nieminen P. (2000), "The effect of statistical methods and study reporting characteristics on the number of citation: a study of four general psychiatric journals", *Scientometrics*, Vol. 53 no. 3, pp. 377-388.

Chapter-4

The Study: Its Scope, Objectives, Hypotheses, Research Methodology Limitations & Significance

CHAPTER-4

THE STUDY: ITS SCOPE, OBJECTIVE, HYPOTHESIS RESEARCH METHODOLOGY LIMITATION AND SIGNIFICANCE

4.1 The Study

Citation analysis is one of the most important bibliometric techniques involving analysis of the references forming part of primary communication citations are the formal explicit linkage between publications that have particular points in common.

Citoanalytical study of doctoral dissertation of thesis which are the product of research activity from an important source of information. Such studies may be useful for acquisition of material, provision of better services to patrons and knowing the location of materials. What part of literature is cited most, how long the literature remains useful to readers, and languages of most cited publication knowledge of all these provides guidance to collection development policies, individual item selection, and retention and binding decisions.

Such studies have been attempted in different subject in natural sciences but paucity of such works exists in humanities and social science. However, some significant studies have been conducted in some areas of social science such as psychology, history, anthropology, political science, sociology and agricultural economics.

4.2 Purpose

Citation analysis is one of the popular methods employed in recent years for identification of core documents and complex relationship citing and cited documents for a particular scientific community in a geographical proximity. The purpose of the present study is to investigate the use pattern of literature as revealed through the analysis of citation figuring in the 'Doctoral Dissertations of Psychology' accepted by Aligarh Muslim University, Aligarh.

4.3 Scope

The topic of the present study is on "Doctoral Dissertations Submitted in the Department of Psychology, Aligarh Muslim University, Aligarh from 2000-2005: A Citation Study". The main purpose of the study is to find out the current citation trends in the field of the doctoral dissertation of psychology. For this purpose the citations from each of the citation from each of the books and the journals of the doctoral dissertations of Psychology are taken for analysis from 2000 to 2005.

4.4 Objectives of the study

The main objectives of the study are:

- To identify the different forms of literature used by the researchers.
- To identify in which subject area, most of the theses have been submitted.
- To determine the year-wise distributions of citations
- To study of the use pattern of different type of documents cited;

- To observe chronological distribution of citations;
- To study the distribution by place of publication;
- To identify the language-wise distribution of citation;
- To study authorship pattern in the field of psychology;
- To prepare a ranked list of books, journals, dictionaries encyclopedias;
- To compile the rank list of cited authors.

4.5 Hypotheses

1. Journals are the most used form by researchers.
2. The most cited journal is "Journal of Applied Psychology".
3. There less number of books is used by researchers in the whole study.
4. The frequency of single author is higher than multiple authors.
5. The most productive country is "USA".
6. Most of the Journal is published in English language.

4.6 Methodology

The first step in this study is to select the source document from which data is to be collected. For this purpose references from 30 doctoral dissertations from 2000 to 2005 has been consulted. Under this study 2852 references were analyzed.

4.6.1 Collection of Data

The first and the most important task is to collect the reference from each thesis. The data are collected from 2000-2005 i.e. for the period of 6 years.

4.6.2 Preparation of Entries

The data relating to all the references appended to the thesis during the period have been collected and tabulate. From 30 theses, 2852 references were recorded on the Microsoft Excel 2007 Software.

4.7 Analysis

All citation were arranged and rearranged in order to conduct the following types of studies.

4.7.1 Form wise distribution

Literature cited is published in different form like books, journals, conference proceedings, dictionaries, Bulletin, encyclopedias, review, thesis, report etc. The information regarding the form was collected from the source data sources and tabulated to find out the most dominant form of literature.

4.7.2 Year wise distribution

This study reveals how many citations were cited in which year. The pattern shows the increasing or decreasing trends of the reference used per annum. For this purpose, a table has been prepared for year wise distribution.

Chapter-5

Data Analysis, Interpretation & Presentation

CHAPTER-5

DATA ANALYSIS, INTERPRETATION AND REPRESENTATION

A total of 2852 of citations were collected from the 30 doctoral theses of Psychology which are submitted in Psychology department, AMU, Aligarh from 2000-2005. These citations formed the basis of the citation analyses and interpretation. The data was collected on MS Excel software 2007 and were analyzed under the following heads:

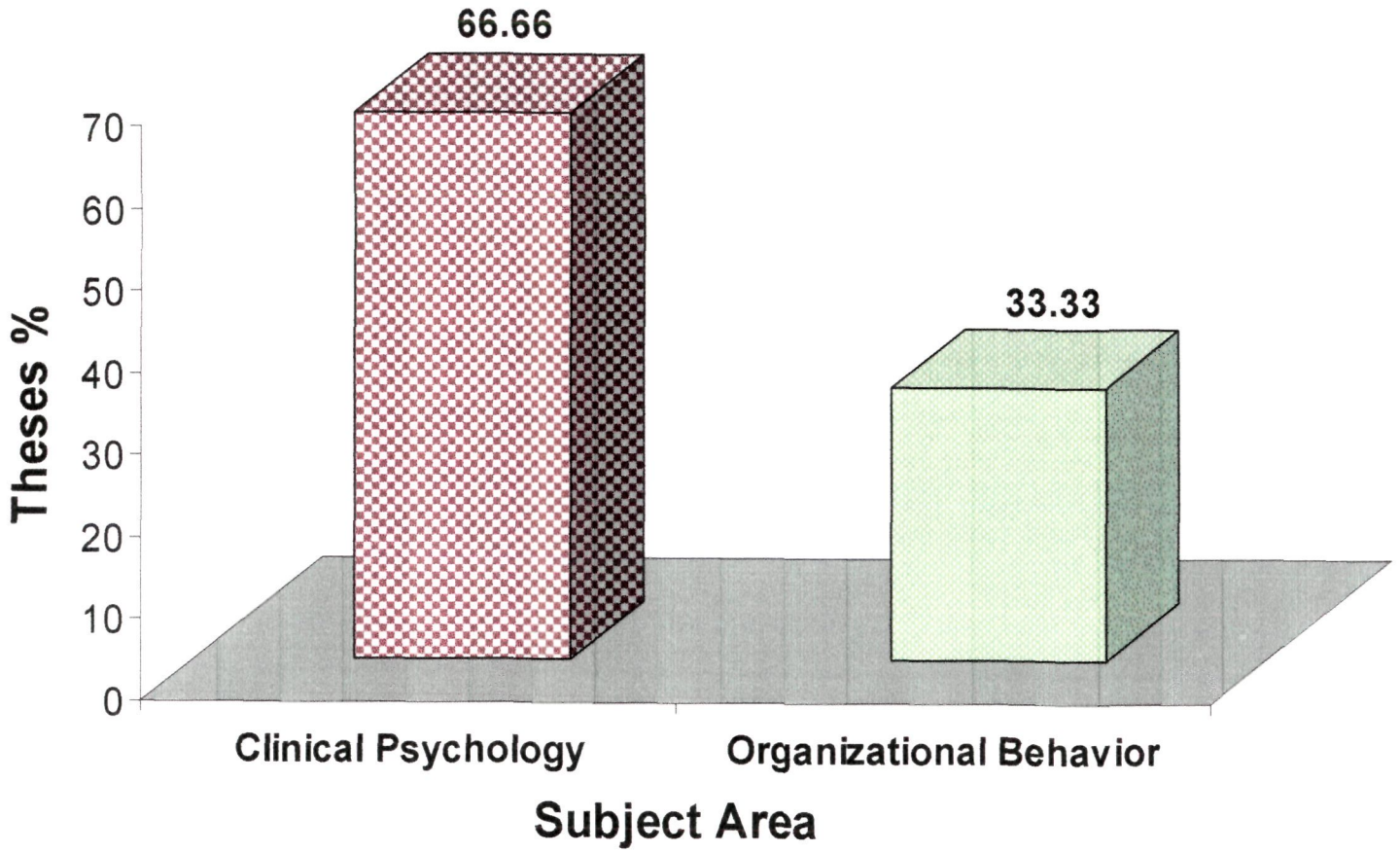
5.1 DISTRIBUTION OF THESES SUBMITTED IN THE PSYCHOLOGY DEPARTMENT, AMU

Table 5.1 shows that in 'Clinical Psychology' most of theses submitted in the department of Psychology, AMU, Aligarh from 2000 to 2004. Out of 30 theses 20(66.66%) theses are submitted in Clinical Psychology and followed by 'Organizational Behavior', i.e. 10(33.33%).

Table 5.1 Distribution of Subject

S.NO	RANK	SUBJECT AREA	YEAR			TOTAL	%AGE	CUMUL. %AGE
			2000-2001	2002-2003	2004-2005			
1	1	Clinical psychology	4	14	2	20	66.66 %	66.66
2	2	Organizational behavior	2	7	1	10	33.33 %	99.99
		Total				**30**		

Fig. No. 5.1 Distribution of theses submitted in the Psychology Department,AMU



5.2 RANKING OF PERIODICALS

Periodicals are very useful for researchers for the scientific communication. The periodicals that contribute most of the literature in a given field are called core journals. Identification of core journals in the subject under study will be useful from the point of view of researchers.

The main aim of the present study is to identify the most important journals containing the most of the literature of research value in the field of Psychology

In the collected data, 1234 references appended to the PhD theses were ranked up to 21st positions. However, table 5.2 lists only 76 periodicals in which the frequency of occurrence of items is up to 2. The periodical with less than 2 items have not been considered. Table 5.2 shows that the first rank was occupied by the journal title **'Journal of Applied Psychology'** which account for 7.96% of total references. Next four positions are occupied by Journals like **'Journal of Personality and social Psychology'** (6.88), **Journal of Psychology'** (5.75%), **Psychological studies'** (4.29%) and **Journal of organizational behavior'** (3.32) respectively

Table 5.2 Ranking of Periodicals

S.No	Name of Periodicals	Country	Freq.	% of Freq.	Cumul. %	Rank
1.	**Journal of applied psychology**	USA	95	7.69	7.69	1
2.	**Journal of Personality and social Psychology**	USA	85	6.88	14.57	2
3.	**Journal of Psychology**	USA	71	5.75	20.32	3
4.	**Psychological studies**	Australia	53	4.29	24.61	4
5.	**Journal of organizational behavior**	USA	41	3.32	27.93	5
6.	**Journal of social psychology**	USA	21	1.70	29.63	6
7.	**Indian journal of applied psychology**	India	19	1.53	31.16	7
8.	**Academy of Management Journal**	UK	16	1.29	32.45	8
9.	**Public Health Nursing**	Germany	15	1.21	33.66	9
10.	**Journal of Personality**	France	15	1.21	34.87	9
11.	**Psychosomatic Medicine**	India	14	1.13	36	10
12.	**Journal of the Indian Academy of Applied Psychology**	France	13	1.05	37.05	11
13.	**Health Psychology**	India	13	1.05	38.1	12
14.	**Journal of vocational behavior**	UK	12	.97	39.07	12

15.	**Journal of Gerontology**	USA	12	.97	40.04	12
16.	**Journal of Counseling Psychology**	USA	12	.97	41.01	12
17.	**American Psychologist**	France	12	.97	41.98	12
18.	**Perceptual and motor skills**	USA	11	.89	42.87	12
19.	**Child Abuse and Neglect**	UK	11	.89	43.76	12
20.	**Administrative science quarterly**	Canada	11	.89	44.65	12
21.	**Personnel Psychology**	UK	10	.81	45.46	13
22.	**Personality & individual difference**	Japan	10	.81	46.27	13
23.	**Journal of Psychological Research**	USA	10	.81	47.08	13
24.	**Journal of Personality & social psychology**	UK	10	.81	47.89	13
25.	***Journal of Indian academy of applied psychology***	India	10	.81	48.7	13
26.	**Journal of American Medical Association**	USA	10	.81	49.51	13
27.	**Journal of personality assessment**	USA	9	.72	50.23	14
28.	**Journal of Occupational Psychology**	France	9	.72	50.95	14
29.	**Journal of occupational Health Psychology**	Australia	9	.72	51.67	14

30.	**Journal of marriage and the family**	Australia	9	.72	52.39	14
31.	**Journal of Educational Research**	India	9	.72	53.11	14
32.	**British journal of educational psychology**	UK	9	.72	53.83	14
33.	***Psycho* physiological medicine**	UK	8	.64	54.47	15
34.	**Organizational Behavior and Human Performance**	USA	8	.64	55.11	15
35.	**Journal of Management**	India	8	.64	55.75	15
36.	**Indian Heart Journal**	USA	8	.64	56.39	15
37.	**Human Relation**	India	8	.64	57.03	15
38.	**Child development**	UK	8	.64	57.67	15
39.	**Scientific American**	India	7	.56	58.23	16
40.	**Journal of social issues**	USA	7	.56	58.79	16
41.	**Journal of Psychosomatic Research**	India	7	.56	59.35	16
42.	**Journal of Educational Psychology**	USA	7	.56	59.91	16
43.	**Journal of clinical psychopharmacology**	USA	7	.56	60.47	16
44.	**Journal of behavioral medicine**	USA	7	.56	61.03	16

45.	**American Journal of Public Health**	USA	7	.56	61.59	16
46.	**American Journal of Psychiatry**	USA	7	.56	62.15	16
47.	**Research in nursing and health**	USA	6	.48	62.63	17
48.	**Personal Psychology**	USA	6	.48	63.11	17
49.	**Organizational Behaviors and Human Performance**	USA	6	.48	63.59	17
50.	**Organizational behavior and Human Decision Processes**	USA	6	.48	64.07	17
51.	**Journal of personality and clinical studies**	USA	6	.48	64.55	17
52.	**Journal of Occupational and Organizational Psychology**	USA	6	.48	65.03	17
53.	**Journal of applied behavior analysis**	USA	6	.48	65.51	17
54.	**Indian Journal of Clinical Psychology**	USA	6	.48	65.99	17
55.	**Developmental Psychology**	India	6	.48	66.47	17
56.	**Applied Psychology**	USA	6	.48	66.95	17
57.	**The deflance Nero Psychoses**	Japan	5	.40	67.35	18
58.	**Sex role**	USA	5	.40	67.75	18
59.	**School Counselors**	Australia	5	.40	68.15	18
60.	**Journal of Indian medical association**	India	5	.40	68.55	18

61.	**Journal of family Issues**	India	5	.40	68.95	18
62.	**Journal of consulting and clinical Psychology**	USA	5	.40	69.35	18
63.	**Journal of child psychology and psychiatry and allied discipliner**	USA	5	.40	69.75	18
64.	**Journal of Austin and developmental disorder**	USA	5	.40	70.15	18
65.	**Journal of applied social psychology**	UK	5	.40	70.55	18
66.	**Journal of anxiety disorder**	USA	5	.40	70.95	18
67.	**Journal of Abnormal Psychology**	USA	5	.40	71.35	18
68.	**Journal of Abnormal and Social Psychology**	USA	5	.40	71.75	18
69.	**Current Direction in psychological science**	USA	5	.40	72.15	18
70.	**college Student Journal**	India	5	.40	72.55	18
71.	**Clinical Pediatrics**	Netherland	5	.40	72.95	18
72.	**British medical journal**	UK	5	.40	73.35	18
73.	**Behavioral Research and Therapy**	USA	5	.40	73.75	18
74.	**Adolescence**	USA	5	.40	74.15	18
75.	**Asian Journal of Psychology and Education**	India	5	.40	74.55	18

76.	**Journal of the American Geriatrics Society**	USA	4	.32	74.87	19
77.	**Journal of Research in Personality**	USA	4	.32	75.19	19
78.	**Journal of psychiatry**	France	4	.32	75.51	19
79.	**Journal of Industrial relation**	Germany	4	.32	75.83	19
80.	**Journal of Genetic Psychology**	France	4	.32	76.15	19
81.	**Journal of Consulting Psychology**	Japan	4	.32	76.47	19
82.	**Journal of Clinical psychology**	USA	4	.32	76.79	19
83.	**Journal of Child Abuse and Neglect**	Germany	4	.32	77.11	19
84.	**Journal of *abnormal social* psychology**	Japan	4	.32	77.43	19
85.	***International* Journal of aging and human development**	India	4	.32	77.75	19
86.	**Indian Journal of Psychometrics & Education**	USA	4	.32	78.07	19
87.	**Group and Organizational Management**	USA	4	.32	78.39	19
88.	**Child and Adolescent Psychiatric Clinics of North America**	UK	4	.32	78.71	19
89.	**Behavior research and therapy**	USA	4	.32	79.03	19

123.	**psychology of women quarterly**	Japan	2	.16	87.11	21
124.	**Psychology & Health**	USA	2	.16	87.27	21
125.	**Psycho-lingua**	USA	2	.16	87.43	21
126.	**Prospective in psychological research**	USA	2	.16	87.59	21
127.	**Progress of Education**	USA	2	.16	87.75	21
128.	**Personality Psychology**	USA	2	.16	87.91	21
129.	**Organizational Studies**	USA	2	.16	88.07	21
130.	**North American Journal of Psychology**	UK	2	.16	88.23	21
131.	**Medical Care**	UK	2	.16	88.39	21
132.	**Lancel**	USA	2	.16	88.55	21
133.	**Journal of marriage and the family**	UK	2	.16	88.71	21
134.	**Journal of Youth and Adolescence**	UK	2	.16	88.87	21
135.	**Journal of the Academy of marketing science**	UK	2	.16	89.03	21
136.	**Journal of social work**	UK	2	.16	89.19	21

108.	**Journal of Epidemiology**	USA	3	.24	83.75	20
109.	**Journal of education and Psychology**	USA	3	.24	83.99	20
110.	**Journal of community psychology**	USA	3	.24	84.23	20
111.	**Journal of College Student Development**	USA	3	.24	84.47	20
112.	**Journal of Career development**	USA	3	.24	84.71	20
113.	**Journal of Black Psychology**	USA	3	.24	84.95	20
114.	**Journal of Applied Behavioral Science**	USA	3	.24	85.19	20
115.	**Journal of Adolescent Health**	India	3	.24	85.43	20
116.	**Issues in mental health nursing**	USA	3	.24	85.67	20
117.	**Indian Journal of Psychology**	USA	3	.24	85.91	20
118.	**Family Practice**	USA	3	.24	86.15	20
119.	**Cognitive Therapy & Research**	USA	3	.24	86.39	20
120.	**Cognition and Emotion**	India	3	.24	86.63	20
121.	**Work and Stress**	India	2	.16	86.79	21
122.	**Vikalpa**	USA	2	.16	86.95	21

90.	**AMJ Repair crypt care med**	USA	4	.32	79.35	19
91.	**American Journal of epidemiology**	UK	4	.32	79.67	19
92.	**Psychological Medicine**	Canada	3	.24	79.91	20
93.	**Psychological Issues**	France	3	.24	80.15	20
94.	**Psychologia**	Japan	3	.24	80.39	20
95.	**Psych Today**	Germany	3	.24	80.63	20
96.	**Pharmacopsychia try**	UK	3	.24	80.87	20
97.	**Personnel Management**	UK	3	.24	81.11	20
98.	**Patient education and counseling**	Australia	3	.24	81.35	20
99.	**Military Medicine**	UK	3	.24	81.59	20
100.	**Learning disabilities Quarterly**	UK	3	.24	81.83	20
101.	**Leadership and organization development**	UK	3	.24	82.07	20
102.	**Journal of Traumatic Stress**	UK	3	.24	82.31	20
103.	**Journal of psychological research**	India	3	.24	82.55	20
104.	**Journal of Psychology and Theology**	USA	3	.24	82.79	20
105.	**Journal of Occupational Medicine**	USA	3	.24	83.03	20
106.	**Journal of Health & Social Behavior**	USA	3	.24	83.27	20
107.	**Journal of General and applied Psychology**	UK	3	.24	83.51	20

137.	**Journal of social Behavior and Personality**	USA	2	.16	89.35	21
138.	**Journal of social and economics studies**	USA	2	.16	89.51	21
139.	**Journal of social and clinical Psychology**	USA	2	.16	89.67	21
140.	**Journal of social & personal relationship**	USA	2	.16	89.83	21
141.	**Journal of personality & Clinical Studies**	USA	2	.16	89.99	21
142.	**Journal of Occupational Behavior**	France	2	.16	90.15	21
143.	**Journal of Nervous and Mental Disease**	UK	2	.16	90.31	21
144.	**Journal of Mental Health Counseling**	USA	2	.16	90.47	21
145.	**Journal of Managerial Issues**	UK	2	.16	90.63	21
146.	**Journal of Interpersonal Violence**	France	2	.16	90.79	21
147.	**Journal of Industrial Psychology**	USA	2	.16	90.95	21
148.	**Journal of Human Values**	USA	2	.16	91.11	21
149.	**Journal of Family Psychology**	Germany	2	.16	91.27	21
150.	**Journal of Economics Psychology**	USA	2	.16	91.43	21

151.	**Journal of Counseling and Clinical Psychology**	USA	2	.16	91.59	21
152.	**Journal of conclusive and clinical psychology**	UK	2	.16	91.75	21
153.	**Journal of community guidance and research**	UK	2	.16	91.91	21
154.	**Journal of clinical child Psychology**	India	2	.16	92.07	21
155.	**Journal of Child Psychology and Psychiatry**	USA	2	.16	92.23	21
156.	**Journal of Business Research**	USA	2	.16	92.39	21
157.	**Journal of Business & Psychology**	USA	2	.16	92.55	21
158.	**Journal of Asthma**	USA	2	.16	92.71	21
159.	**Journal of American college health**	France	2	.16	92.87	21
160.	**Journal of American Academy of child and Adolescent Psychiatry**	Japan	2	.16	93.03	21
161.	**Journal of Aging Studies**	France	2	.16	93.19	21
162.	**Journal of Advancement of Nurse**	Japan	2	.16	93.35	21

163.	**Journal of adolescent research**	USA	2	.16	93.51	21
164.	**Journal Neuropsychologic al**	USA	2	.16	93.67	21
165.	**Journal Comp. Physiological Psychological**	USA	2	.16	93.83	21
166.	**Johns Hopkins Medical Journal**	USA	2	.16	93.99	21
167.	**International journal of social psychology**	UK	2	.16	94.15	21
168.	**International Journal of Psychology**	India	2	.16	94.31	21
169.	**International Journal of Psychiatry and Medicine**	India	2	.16	94.47	21
170.	**International journal of Geriatric psychiatry**	India	2	.16	94.63	21
171.	**International Journal of Adolescence and Youth**	India	2	.16	94.79	21
172.	**Indian Journal of Social work**	France	2	.16	94.95	21
173.	**Indian Journal of Psychological Issues**	Germany	2	.16	95.11	21
174.	**Indian Journal of Community Guidance Service**	USA	2	.16	95.27	21
175.	**Indian Journal of Behavior**	USA	2	.16	95.43	21

176.	**Human development**	UK	2	.16	95.59	21
177	**Health Care for Women International**	USA	2	.16	95.75	21
178.	**Gerontologist**	*Philippines*	*2*	*.16*	95.91	21
179.	**Genetics Social and General Psychology**	USA	2	.16	96.07	21
180.	**Experiments in Personality**	Philippines	2	.16	96.23	21
181.	**Economics and Political Weekly**	China	2	.16	96.39	21
182.	**Development & Psychopathology**	Germany	2	.16	96.55	21
183.	**Current Opinion in Psychology**	UK	2	.16	96.71	21
184.	**Counseling Psychology Quarterly**	India	2	.16	96.87	21
185.	**Clinical Psychology**	India	2	.16	97.03	21
186.	**Child and family behavior therapy**	India	2	.16	97.19	21
187.	**Career development quarterly**	USA	2	.16	97.35	21
188.	**British journal of Psychiatry**	USA	2	.16	97.67	21
189.	**Bombay Psychologist**	USA	2	.16	97.83	21
190.	**Behavioral science**	USA	2	.16	97.99	21

191.	**Behavioral Disorder**	USA	2	.16	98.15	21
192.	**Arch phys med. Rehabil**	USA	2	.16	98.31	21
193.	**An International Journal**	France	2	.16	98.47	21
194.	**American Psychological Association**	USA	2	.16	98.63	21
195.	**American Journal of Ment.Def.**	USA	2	.16	98.79	21
196.	**American Psychologist**	USA	2	.16	98.95	21
197.	**Albert journal of educational research**	Australia	2	.16	99.11	21
198.	**Acta Psychiatrica Scandinavica**	USA	2	.16	99.27	21
199.	**A journal of Human behavior**	France	2	.16	99.43	21
	TOTAL		**1234**	**99.27**		

5.3. FORM-WISE DISTRIBUTION

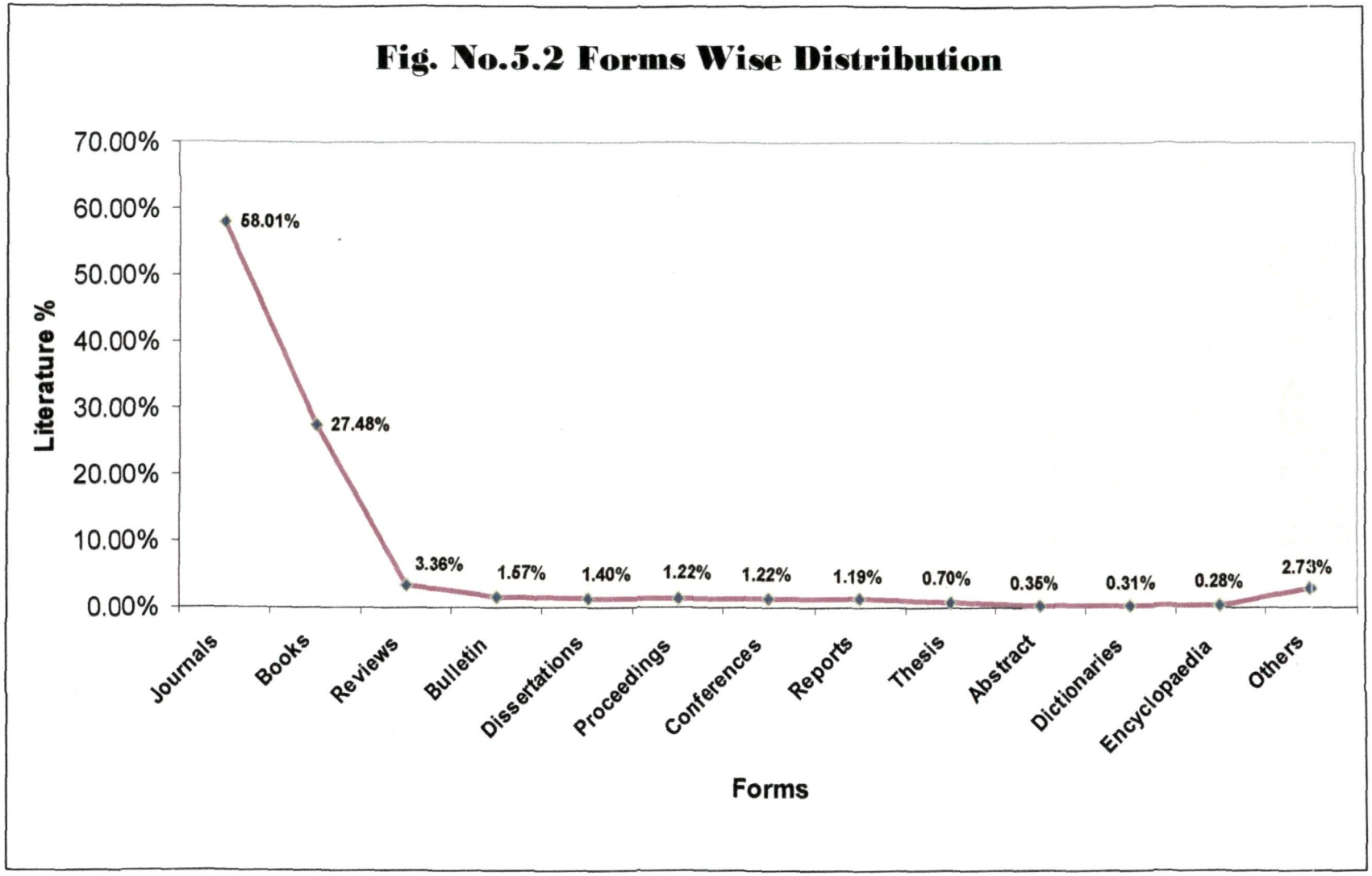
Information is available in a variety of forms i.e. books, Journals, conference proceedings, reports, Dictionaries, Encyclopedias Bulletin, Reviews Dissertations, etc. The study regarding the form wise distribution of citation have been done in order to know the most dominant form in which the information is cited. The study will be helpful for the information scientists as well as researchers who are interested in the field of Psychology, to know the most dominant form in which the information was being cited on the concept.

From Table-5.3 it is found that journals are the most dominant form in which information is communicated in Psychology. 58.01% literature on the subject appeared in the forms of journals. Books and Review constitute 27.48% and 3.36% respectively and other are in the form of Bulletin, Dissertations, Proceedings, Conferences, Reports, Theses, Abstract, Dictionaries, Encyclopedias, others constitute 1.57%,1.40%,1.22%,1.22%,1.19%,0.70%,0.35%,0.31%,0.28%, 2.73% respectively.

Table 5.3 Form Wise Distribution

S.No	Rank	Name of Forms	Frequency	% of Frequency	Cumulative %
1	1	Journals	1658	58.01%	58.01
2	2	Books	784	27.48%	85.49
3	3	Reviews	96	3.36%	88.85
4	4	Bulletin	45	1.57%	90.42
5	5	Dissertations	40	1.40%	91.82
6	6	Proceedings	35	1.22%	93.04
7	7	Conferences	35	1.22%	94.26
8	8	Reports	34	1.19%	95.45
9	9	Thesis	20	0.70%	96.15
10	10	Abstract	10	0.35%	96.5
11	11	Dictionaries	9	0.31%	96.81
12	12	Encyclopedias	8	0.28%	97.09
13	13	Others	78	2.73%	99.82
		TOTAL	2852		

Fig. No.5.2 Forms Wise Distribution



5.4 DECADE-WISE DISTRIBUTION OF BOOKS

Year wise distribution of citations gives the idea about the scattering and expansion of the subject or discipline. Table-5.4 indicates that year wise distribution of books published during the period of 1854 to 2005.

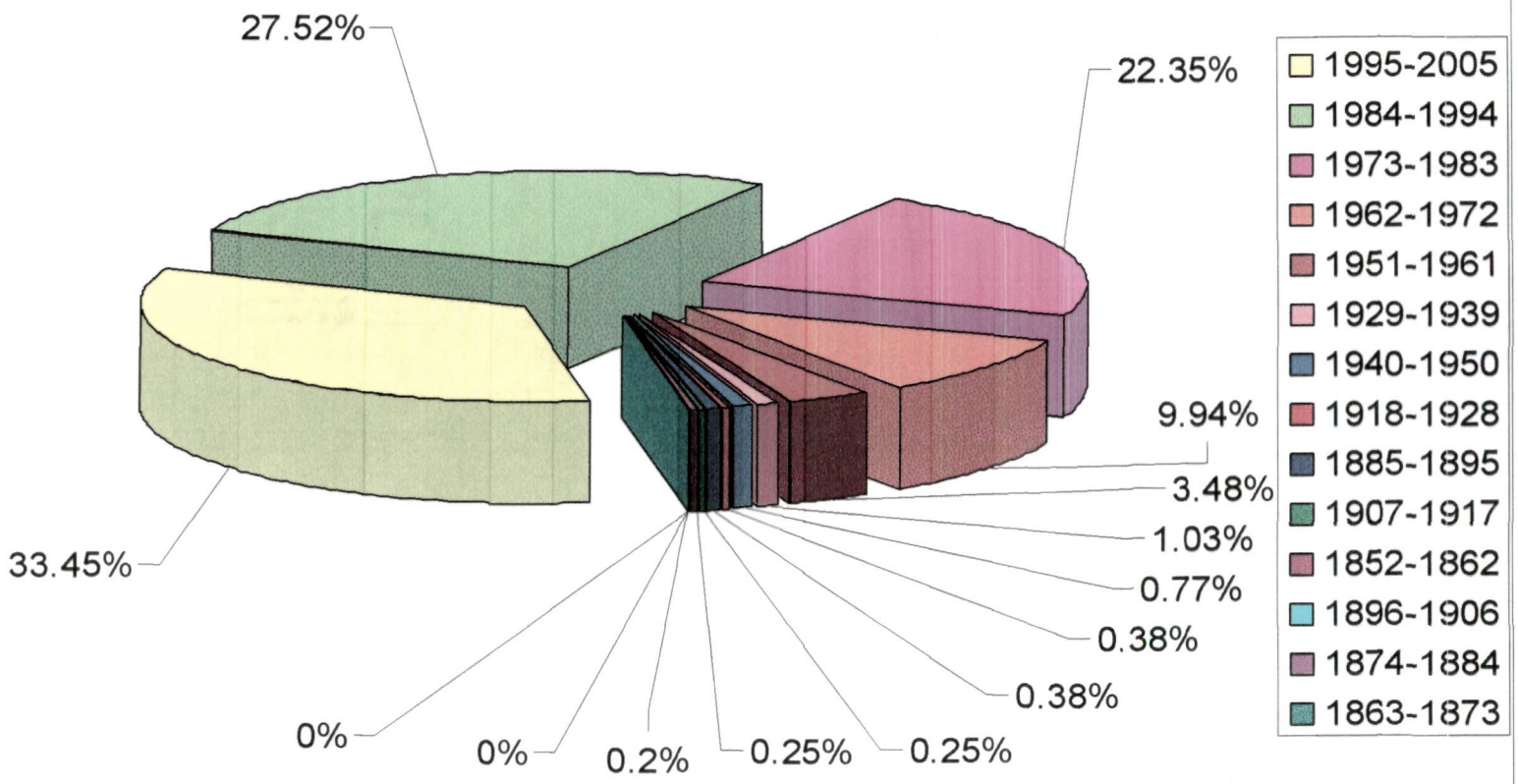
According to the table it is observed that maximum number of books were published during the period of 1995-2005 having 33.45%, 1984-1994 having 27.52% and no books appeared during the period 1863-1873 and 1874-84.

Table 5.4 Decade Wise Distribution of Books

S.No	Rank	Period of origin	Frequency of Occurrence	Percentage of Frequency	Cumulative Percentage of Frequency
1	1	1995-2005	259	33.45%	33.45
2	2	1984-1994	213	27.52%	60.97
3	3	1973-1983	173	22.35%	83.32
4	4	1962-1972	77	9.94%	93.26
5	5	1951-1961	27	3.48%	96.74
6	6	1929-1939	8	1.03%	97.77
7	7	1940-1950	6	0.77%	98.54
8	8	1918-1928	3	0.38%	98.92
9	9	1885-1895	3	0.38%	99.3
10	10	1907-1917	2	0.25%	99.55
11	11	1852-1862	2	0.25%	99.8
12	12	1896-1906	1	0.12%	99.92
13	13	1874-1884	0	0%	99.92
14	14	1863-1873	0	0%	99.92
		Total	**774 +*10 =784**	**99.92%**	

*10 citations somehow, appeared without the year of publication

Fig. No. 5.3 Decade Wise Distribution of Books



5.5 DECADE WISE DISTRIBUTION OF PERIODICALS

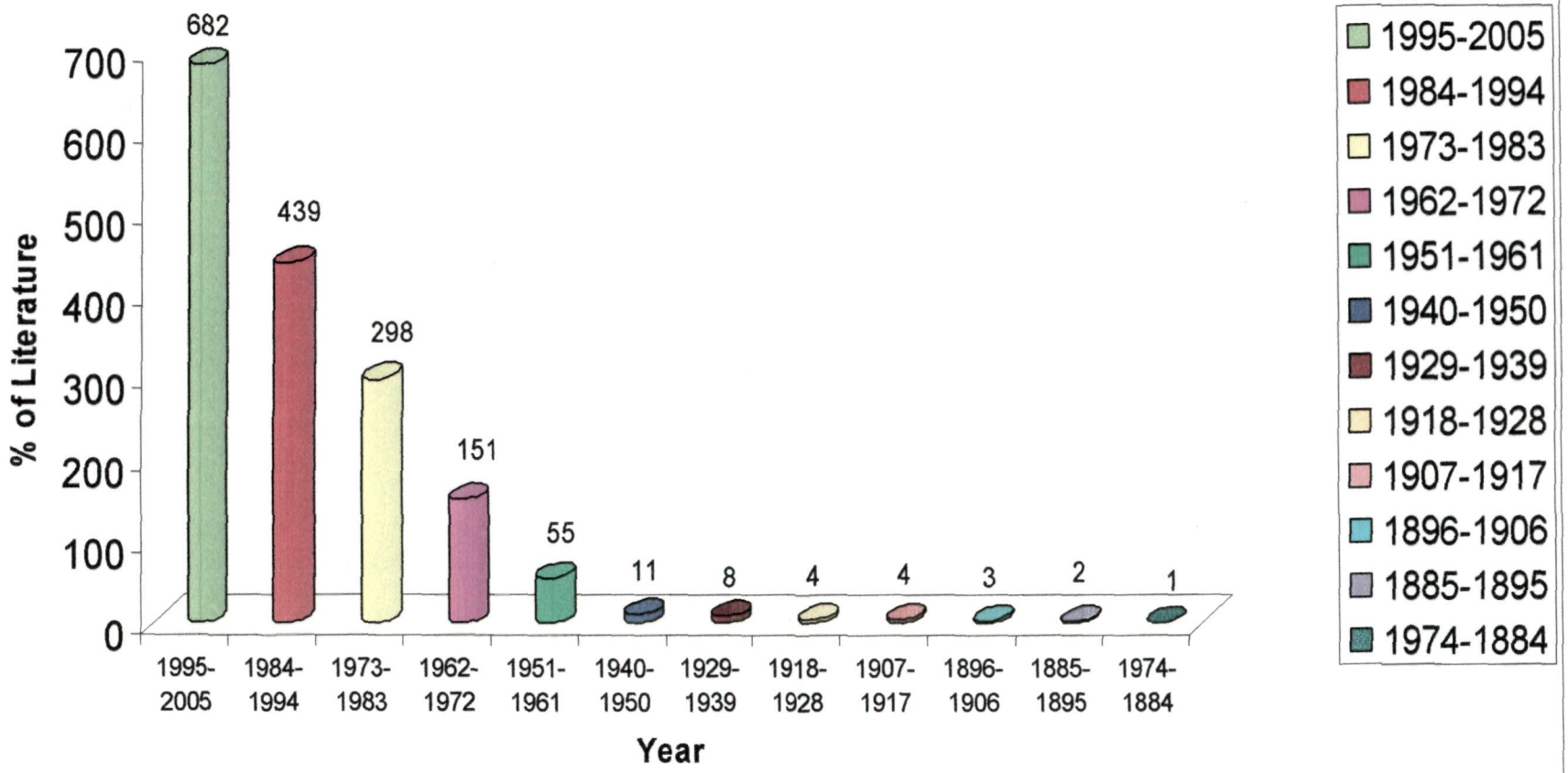
There 30 theses has been submitted in the Psychology Department from 2000-2005. There 2852 citations were noted down in which 1658 citation were from journals. This table shows the year wise distribution of papers published during the period of six year.

According to the table 5.5 it is observed that maximum number of journal were published during the period of 1995-2005 having 41.13%, followed by the period 1884-1994 having 26.48% and the minimum number of journals appeared during the period 1874-1884 having 0.06%.

Table 5.5 Decade Wise Distribution of Periodicals

S.No	Rank	Period of origin	Frequency of Occurrence	Percentage of Frequency	Cumulative Percentage of Frequency
1	1	1995-2005	682	41.13%	41.13
2	2	1984-1994	439	26.48%	67.61
3	3	1973-1983	298	17.97%	85.58
4	4	1962-1972	151	9.10%	94.68
5	5	1951-1961	55	3.31%	97.99
6	6	1940-1950	11	0.66%	98.65
7	7	1929-1939	8	0.48%	99.13
8	8	1918-1928	4	0.24%	99.37
9	9	1907-1917	4	0.24%	99.61
10	10	1896-1906	3	0.18%	99.79
11	11	1885-1895	2	0.12%	99.91
12	12	1874-1884	1	0.06%	99.97
		TOTAL	**1658**		

Fig. No. 5.4 Decade Wise Distribution of Periodicals



5.6 DISTRIBUTION OF AUTHORS OF BOOKS (BY NUMBER)

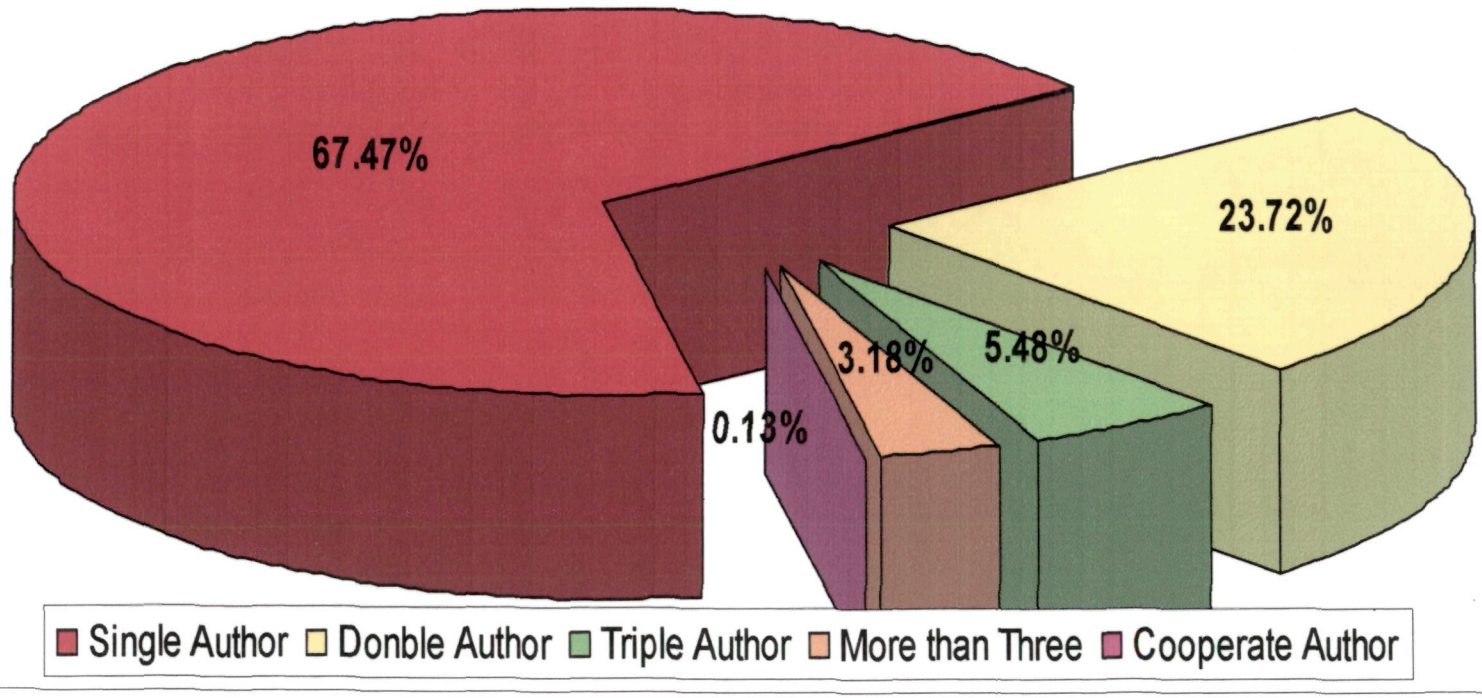
The characteristics of any subject literature include not only basic publishing pattern but that of the authors themselves. So the authors were analyzed to determine the frequencies of one, two, three and more than three authors as presented in table 5.6.

Table 5.6 shows that single authorship is 529 forming 67.47% of the total no citation in the field. Double authorship placed on second rank with 186 forming 23.72% of the total. The last rank was occupied by cooperate authors.

Table 5.6 Distribution of Authors of Books(by Number)

S.No	Rank	Pattern of Authorship	Frequency of Occurrence	Percentage of Frequency	Cumulative Percentage of Frequency
1	1	Single Author	529	67.47%	67.47
2	2	Double Author	186	23.72%	91.19
3	3	Triple Author	43	5.48%	96.67
4	4	More than Three	25	3.18%	99.85
5	5	Cooperate Author	1	0.13%	99.98
		TOTAL	**784**		

Fig.No. 5.5 Distribution of Authors of Books (by Number)



5.7 DISTRIBUTION OF AUTHORS OF PERIODICALS (BY NUMBER)

Table 5.7 shows the productivity of authors of journals. It is found that single authorship is 590 forming 35.58% out of 1658 journals followed by double authorship, more than three and triples authorship as 34.68%, 16.46% and 13.26% respectively.

Table 5.7 Distribution of Authors of Periodicals (by Number)

S.No	Rank	Pattern of Authorship	Frequency of Occurrence	Percentage of Frequency	Cumulative Percentage of Frequency
1	1	Single Author	590	35.58%	35.58
2	2	Double Author	575	34.68%	70.26
3	3	More than Three	273	16.46%	86.72
4	4	Triple Author	220	13.26%	99.98
		TOTAL	**1658**		

Fig. No. 5.6 (a) Distributio of Authors of Periodicals (By Number)

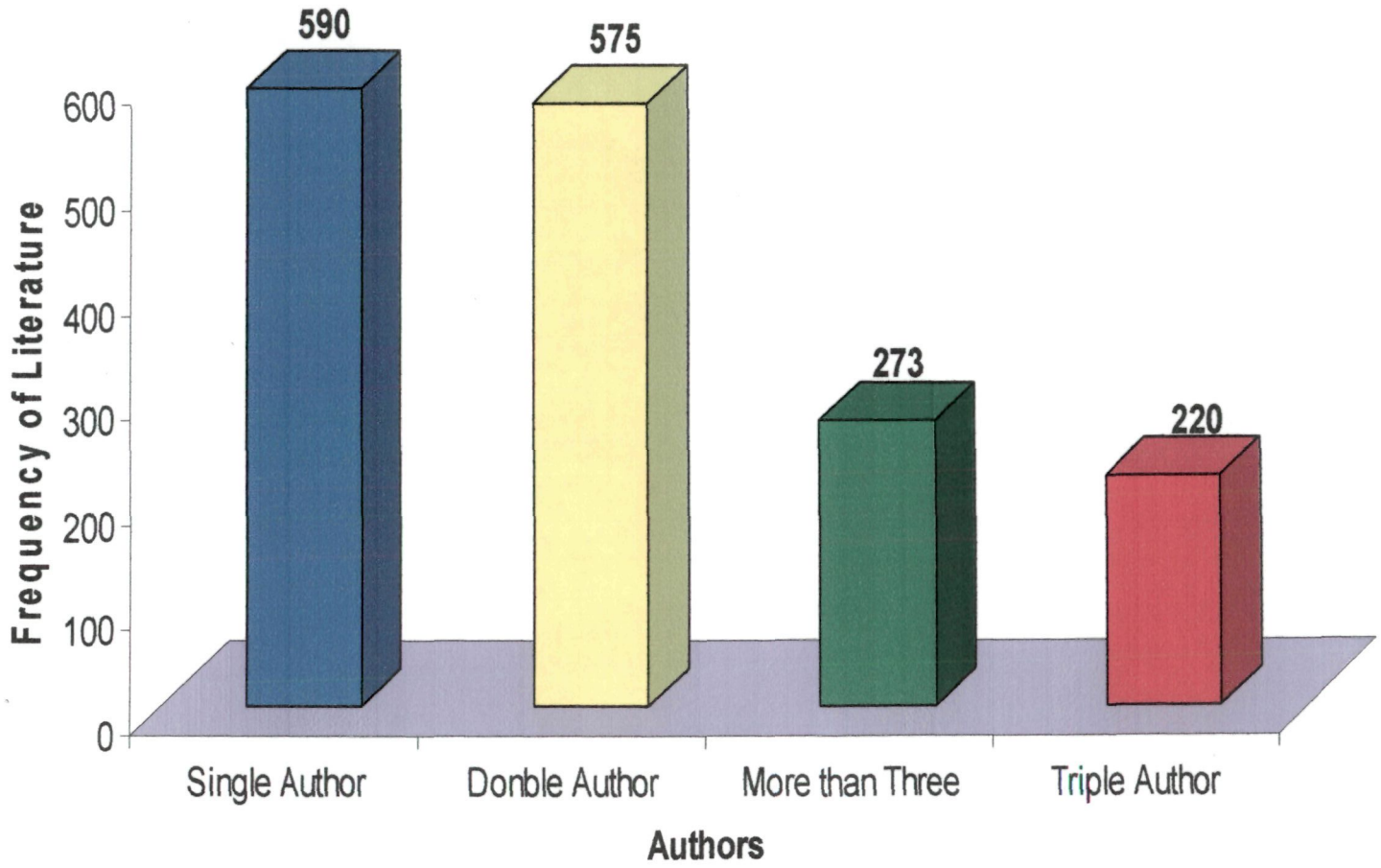
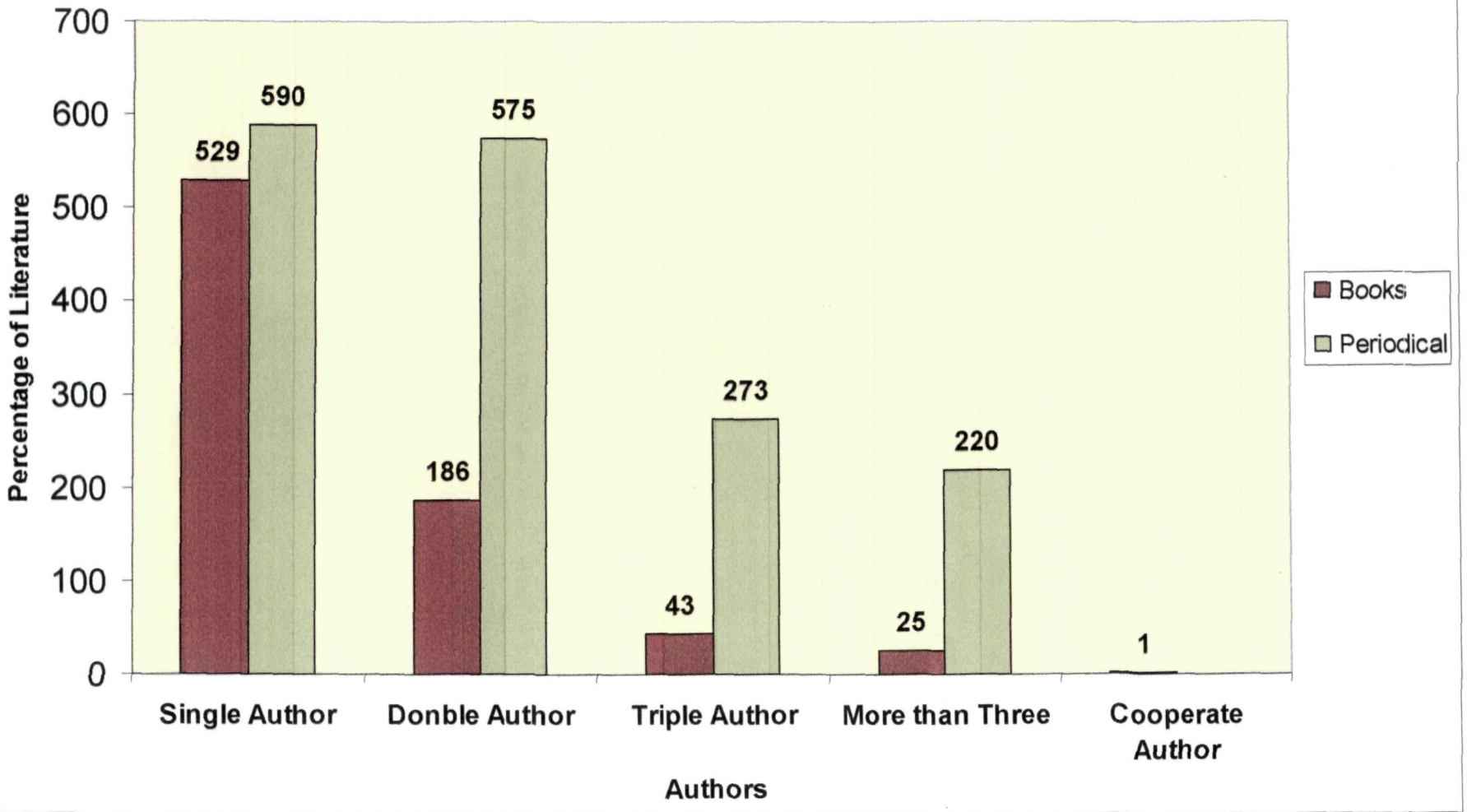


Fig. No. 5.6(b) Distribution of Authors Books & Periodicals



5.8 COUNTRY WISE DISTRIBUTION OF BOOKS

As table 5.8 shows country wise analysis of most cited publications it indicates that USA is a highly productive country forming 55.85% literature from the total no of publication. India is a second most productive country comprising 18.14% of total literature and Switzerland & Philippines is less productive country.

Table 5.8 County Wise Distribution of Books

S.No	Rank	Name of Country	Frequency	Percentage of Frequency	Cumulative Percentage
1	1	USA	434	55.85%	55.85
2	2	India	141	18.14%	73.99
3	3	England	79	10.16%	84.15
4	4	Australia	55	7.07%	91.22
5	5	France	28	3.60%	94.82
6	6	U.K	12	1.54%	96.36
7	7	Japan	5	0.64%	97
8	8	Germany	4	0.51%	97.51
9	9	Singapore	4	0.51%	98.02
10	10	Canada	8	1.02%	99.04
11	11	Netherlands	3	0.38%	99.42
12	12	china	2	0.25%	99.67
13	13	Philippines	1	0.12%	99.79
14	14	Switzerland	1	0.12%	99.91
		TOTAL	**777 +*7=784**		

*7 citation somehow appeared without place of publication

Fig.No. 5.7(a) Country Wise Distribution of Books

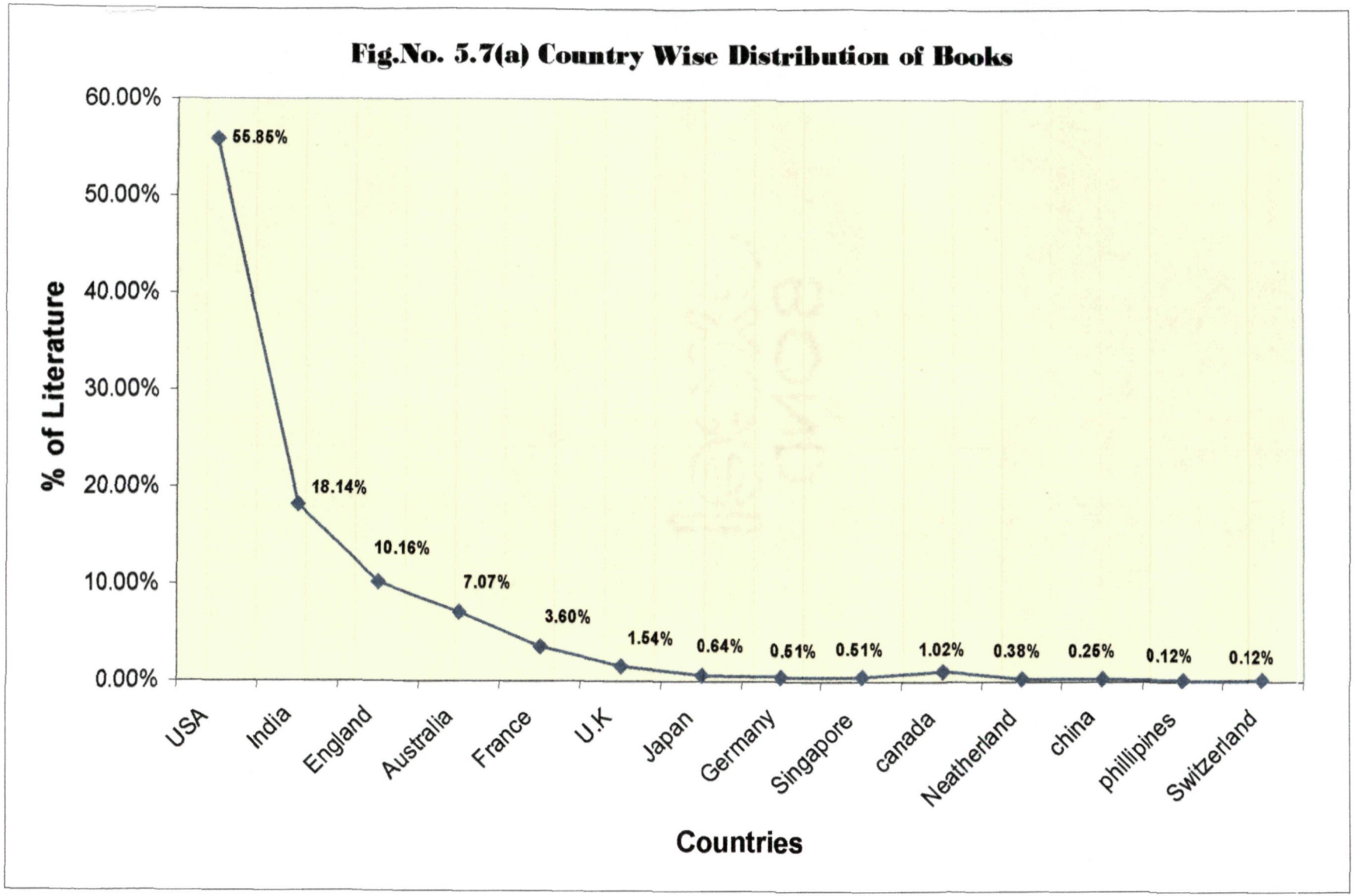
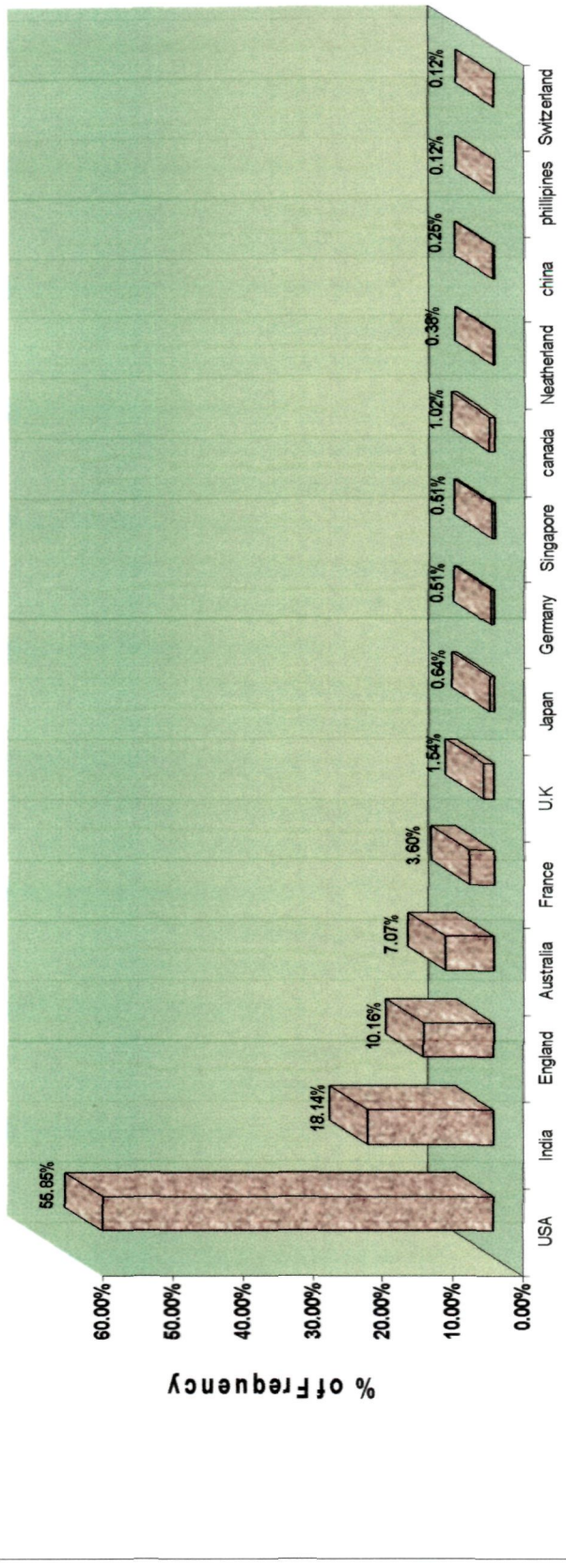


Fig. No. 5.7(b) Country Wise Distribution of Books



5.9 COUNTRY WISE DISTRIBUTION OF PERIODICALS

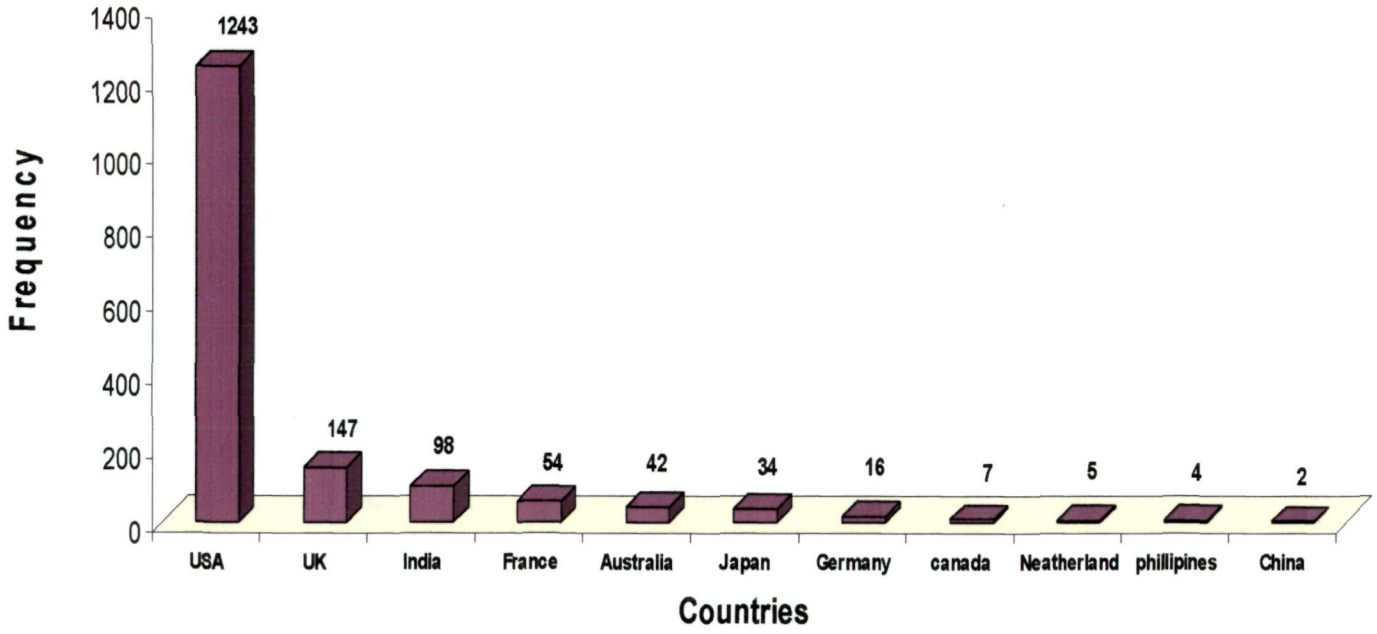
Table-5.9 contains a list of 11 countries producing research material on the subject. These countries have been ranked on the basis of frequency of occurrence of items. It is observed that USA is the most productive country producing 1243 citations forming (75.24%) of literature in the subject followed by UK, producing 147 citations forming (8.89%) and India occupies third position which produces 98(5.93%). Minimum producing country is china 2(.12%).

Table 5.9 Country Wise Distribution of Periodicals

S.No	Rank	Name of Country	Frequency	Percentage of Frequency	Cumulative Percentage
1	1	USA	1243	75.24%	75.24
2	2	UK	147	8.89%	84.13
3	3	India	98	5.93%	90.06
4	4	France	54	3.26%	93.32
5	5	Australia	42	2.54%	95.86
6	6	Japan	34	2.05%	97.91
7	7	Germany	16	0.96%	98.87
8	8	Canada	7	0.42%	99.29
9	9	Netherlands	5	0.30%	99.59
10	10	Philippines	4	0.24%	99.83
11	11	China	2	0.12%	99.95
		TOTAL	**1652 +*6= 1658**		

*6 journals are appeared without place of publication

Fig.No. 5.8 Country Wise Distribution of Periodicals



5.10 LANGUAGE WISE DISTRIBUTION OF BOOKS

This type of study shows the most dominant language in which the literature on the subject is cited in the journals. This information will be useful for researcher as well as information scientists. The provision of translation services in the documentation and information centers may be planned on the basis of such study.

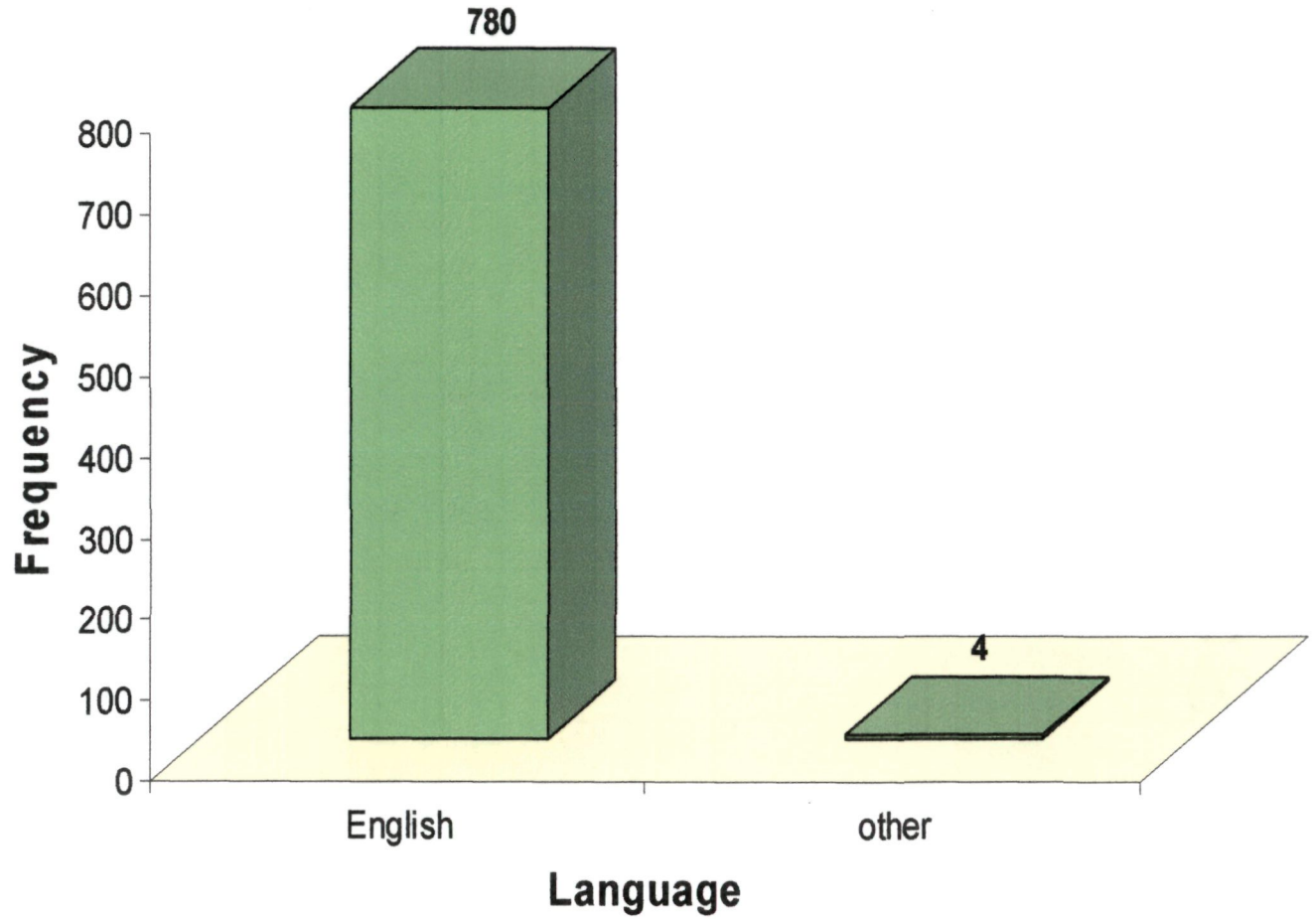
Table 5.10 shows the language wise distribution of 784 citations. English language was found to be most dominant language as 780 citations, constituting (99.48%) that were published in this language and 0.51% occupied by other language. Based on the information provided in table-5.10, it is evident that English language occupies 1st rank with around 99.48% of the total.

So, from this study it is found that English is the dominant language.

Table 5.10 Language Wise Distribution of Books

S.No	Rank	Language	Frequency of occurrence	Percentage of Frequency	Cumulative Percentage of Frequency
1	1	English	780	99.48%	99.48
2	2	other	4	0.51%	99.99
		TOTAL	**784**		

Fig. No. 5.8 Language Wise Distribution of Books



5.11 RANKING OF AUTHORS OF BOOKS

Productive authors or researchers are very important source of information in any discipline. It is very essential to know the productive authors and their works for the better foundation of any research. The purpose of the present study is to find out some most productive cited authors of present study.

A rank list is prepared on the basis of frequency of citation used. It is clear from the table-5.11 that Mc Clelland, D.C 8 citations, i.e. (4.27 %) is the most cited author. Robbins, S.P 7, i.e., (3.74%) ranks second, followed by Selye, H who with 6 occupies the third rank.

Table 5.11 Ranking of Authors of Books

S.No	Name of Authors	Frequency	Rank
1.	**Mc Clelland,D.C**	8	1
2.	**Robbins,S.P**	7	2
3.	**Selye,H**	6	3
4.	**Rokeach,M**	5	4
5.	**Erikson,E.H**	4	5
6.	**Luthans,F**	4	5
7.	**Murray,H.A**	4	5
8.	**Pestonjee,D.M**	4	5
9.	**Adler,A**	3	6
10.	**Blum,M.L**	3	6
11.	**Davis,K**	3	6
12.	**De, N.R**	3	6
13.	**Edwards,A.L**	3	6
14.	**Freud,S**	3	6
15.	**Herskovits,M.J**	3	6

16.	**Hoppock,R**	3	6
17.	**Horney,K**	3	6
18.	**Jahoda,M**	3	6
19.	**Lazuarus,R.S**	3	6
20.	**McGrath,J.E**	3	6
21.	**Myers,D.G**	3	6
22.	**Roe,R.A**	3	6
23.	**Sinha,J.B.P**	3	6
24.	**Adams,J.S**	2	7
25.	**Alderfer,C.P**	2	7
26.	**Allport,G.W**	2	7
27.	**Arnold,M.B**	2	7
28.	**Bandura,A**	2	7
29.	**Barron,F**	2	7
30.	**Beak,A.T**	2	7
31.	**Benson,H**	2	7
32.	**Berkowitz,L**	2	7
33.	**Bhatiya,B.D**	2	7
34.	**Broota,K.D**	2	7
35.	**Buck,V.E**	2	7
36.	**Buss,A.H**	2	7
37.	**Cooper,C.L**	2	7
38.	**Domhoff,G.W**	2	7
39.	**Durkheim,E**	2	7
40.	**Fordyce,M.W**	2	7
41.	**Greenberg,J**	2	7
42.	**H.S,Wasir**	2	7
43.	**Hasan,Q**	2	7
44.	**Herzberg,F**	2	7
45.	**Kerlinger,F.N**	2	7
46.	**Kohlberg,L**	2	7
47.	**Kornhauser,A**	2	7
48.	**Laing,R.D**	2	7
49.	**Lefcourt,H.M**	2	7
50.	**Lewin,K**	2	7

51.	**Locke,E.A**	2	7
52.	**Lorske,J**	2	7
53.	**Lynch,J.J**	2	7
54.	**Maier,N.R.F**	2	7
55.	**Maslow,A.H**	2	7
56.	**Mayo,E**	2	7
57.	**McLean,A**	2	7
58.	**Menninger,K.A**	2	7
59.	**Mohsin,S.M**	2	7
60.	**Pareek,U**	2	7
61.	**Pervin,L.A**	2	7
62.	**Rotter,J.B**	2	7
63.	**Schultz,D**	2	7
64.	**Schwartz,S.H**	2	7
65.	**Sinha,D**	2	7
66.	**Smith,H.C**	2	7
67.	**Sullivan,H.S**	2	7
68.	**Symonds,P.M**	2	7
69.	**Thoits,P.A**	2	7
70.	**Tillich,P**	2	7
71.	**Vaid,K.N**	2	7
72.	**Vroom,V.H**	2	7
73.	**William,R.M.Jr**	2	
	TOTAL	187	

5.12 RANKING OF AUTHORS OF PERIODICALS

Ranking list of authors name indicates that Sinha, J.B.P occupied first rank, which forming 5(4.09%), Srivastava, A.K occupies second rank, forming 4(3.27%) and the table shows that 13 authors occupies 3rd rank. There are 77 authors whose names occurred twice.

Table 5.12 Ranking of Authors of Periodicals

S.No	Name of Author	Frequency	Rank
1	Sinha,J.B.P	5	1
2	Srivastava,A.K	4	2
3	Anantharaman,R.N	3	3
4	Boehnke,K	3	3
5	Cherns,A.B	3	3
6	Emmons,R.A	3	3
7	Gandhi,K.A	3	3
8	Hagborg,W.J	3	3
9	Hofstede,Geert	3	3
10	Jena,S.P.K	3	3
11	Rim,Y	3	3
12	Schein,E	3	3
13	Seeman,M	3	3
14	Super,D.E	3	3
15	Vroom,V.H	3	3
16	Al-Shammari,Minwir,M	2	4
17	Berkowitz,L	2	4
18	Bettelheim,B	2	4
19	Brunstein,J.C	2	4
20	Buss,A.H	2	4
21	Chou,Keen,Lee	2	4
22	Christopher,O	2	4
23	Cobb,S	2	4
24	Coleman,J.C	2	4
25	Delmonte,M.M	2	4
26	Elizur,D	2	4

27	Ellison,C.G	2	4
28	Freud,S	2	4
29	Gough,H.G	2	4
30	Jenkins,S.R	2	4
31	Joshi,G	2	4
32	Khan,A	2	4
33	Koenig ,H.G	2	4
34	Lawler,E.E	2	4
35	Levenson,H	2	4
36	Mehta,P	2	4
37	Orpen,C	2	4
38	Pettigrew,A.M	2	4
39	Polkinghorne,D.E	2	4
40	Pollner,M	2	4
41	Porter,L.W	2	4
42	Rosen,H	2	4
43	Rotenberg,K.J	2	4
44	Rouxel,Geraldine	2	4
45	Rutters.M	2	4
46	Schwartz,S.H	2	4
47	Sell,S.B	2	4
48	Sheridan,J.E	2	4
49	Speicher,B	2	4
50	Stake,J.E	2	4
51	Welford,A.T	2	4
52	White,R.W	2	4
	TOTAL	**122**	

Chapter-6

Findings of The Study & Tenability of Hypotheses

CHAPTER -6

FINDING OF THE STUDY AND TENABILITY OF HYPOTHESES

6.1 FINDING OF THE STUDY

The major findings of this study have been concluded as under:

- A rank list of journals, first 21 most cited journal with a minimum of 2 citations has been given; which accounts for 74.42%(1234) of total journal literature(1658). The remaining 25.57% are contributed by 424 journals, which have been cited only once. The "Journal of Applied Psychology" occupied the first position with the highest number of citation, i.e., 95(7.69%).

- The researchers in the field of psychology mainly use journals, which have the highest number of citation, i.e. 58.13 %(1658) of total references (2852), than books have the second highest number of citation, i.e., 27.48 % (784) of total references and other sources account for 14.37%(410) in which encyclopaedias have the minimum citation, i.e., 0.3%.

- The maximum number of theses are submitted by researcher in "Clinical Psychology", which account for 20(66.66%) and the minimum theses are submitted in "Organizational Behaviour", i.e., 10(33.33%).

- The most productive country of book is "USA" which has the highest number of citation, 434(55.85%), followed by "India" i.e., 141(18.14%).
- The most productive country of journal is "USA" which has highest number of citation, 1243(75.24%), followed by "U.K" i.e., 147(8.89%).
- The most books are used by research scholar, were taken from the period 1995-2005 which account for 259(33.45%) and minimum books were taken from 1863-1873, which accounts for 0%.
- The most journals are used by research scholar, were taken from the period 1995-2005, which account for 682(41.13%) and the minimum periodicals were taken from 1874-1884, which accounts for only 1(0.06%).
- The majority of the documents in the form of journals, books etc are in English language, i.e., 99.48% and 0.58% occupied by other languages.
- Rank list of authors name indicate that maximum journals were contributed by Sinha, J.B.P, i.e., 5(4.09%). The second place is occupied by Srivastava, A.K, accounting for 4, i.e.,(3.27%). There are only 122 (7.35%) authors whose name occurred twice and more than twice and the rest 1536(92.64%) occurred only once.
- Rank list of authors names indicate that maximum Books were contributed by Mc Clelland, D.C, which account for 8(4.27%). The second place is occupied by Robbins,S.P, which accounts for 7, i.e.,(3.74%). There are only 187(23.8%) authors whose name occurred twice

and more than twice and the rest 657(83.80%) occurred only once.

6.2 TENABILITY OF HYPOTHESES

6.2.1 Hypothesis 1

The researcher in the field of psychology are mainly consulting 'Journals'

It is clear from the table 5.3 that the journals have highest number of citation, accounting for 1658 (58.01%) of total citations. There are very less numbers of books cited in the table. Hence a hypothesis is proved.

6.2.2 Hypothesis 2

The most cited journal is 'Journal of applied psychology'

Table 5.2 reveals that the 'Journal of applied psychology' occupied the first position with the highest citation number 95(7.69%). Hence hypothesis is proved.

6.2.3 Hypothesis 3

The less number of books are used by research scholar in whole study.

Table 5.3 reveals that very less number of books, i.e., only 784(27.48%) were used in the overall study. Hence hypothesis is proved.

6.2.4 Hypothesis 4

The frequency of single authors is higher than multiple authors.

The table 5.6 and 5.7 reveals that most of the books, i.e., 529(67.47%) and journals i.e., 590(35.58%) were produced by single authors. Hence hypothesis is proved.

6.2.5 Hypothesis 5

The most productive country is 'USA'.

The table 5.8 and 5.9 reveals that USA occupied the first rank in both books and journals with highest frequency 434(55.85%) and 1243(75.24%) respectively. Hence hypothesis is proved.

6.2.6 Hypothesis 6

Most of the literature is published in 'English language'

The table 5.10 reveals that the literature used by the researchers in journals were completely in English language and in books also maximum number of literature were in English language. Hence hypothesis is proved.

Bibliography

BIBLIOGRAPHY

1. Aksnes, D.W. (2003), "A macro study of self citation", *Scientometrics*, Vol. 56, No. 2, pp. 235-246.

2. American Psychiatric Association (2000), Diagnostic and statistical manual of mental disorders, 4th ed., Washington D.C, pp.250-267.

3. Baddeley, A. D. (2003)," Is working memory working? ", *Quarterly Journal of Experimental Psychology*, Vol.44, No.1,pp. 1-31.

4. Baughman, J.C. (1974), "A structure analysis of the literature of Sociology", *Library Quarterly,* Vol. No.4, 44, pp. 293-308.

5. Bhatt & Sampath Kumar (2008), "A citation analysis of research articles from scholarly electronic journals published in 2000-2006", *Journal of Library Information Science,* Vol.88, No.2, pp. 212-176.

6. Bill Johnson (2009), "Environmental Impact: A preliminary citation analysis of local faculty in a new academic program in environmental and human health applied to collection development in an academic library", *Library Philosophy and Practice,* Vol. 2, No.2, pp.242-482.

7. Biradar, B.S. and Sampath Kumar, B.T. (2002), "Chemical Technology Literature: An Obsolescence Study", *Annals of Library and Information Studies*, Vol. 50 No. 4, pp. 156-162.

8. Bordons, M., Fernandez, M.T. and Gomez, I. (2002), "Advantages and Limitations in the Use of Impact Factor Measures for the Assessment of Research Performance in A Peripheral Country", *Scientometrics*, Vol. 53 No. 2, pp. 195-206.

9. Donohue, J.C. (2007), "A Bibliometric Analysis of Certain Information Science Literature", *Journal of the American Society for Information Science*, Vol. 23, No. 5, pp. 313-317.

10. Dulle, F.W., Lwehabura, M.J.F., Matovelo, D.S. and Mulimila, R.T. (2004), "Creating a Core Journals Collection for Agricultural Research in Tanzania: Citation Analysis and User Opinion Techniques", *Library Review*, Vol. 53 No. 5, pp. 270-277.

11. Engle, R. W., Cantor, J., & Carullo, J. J. (1997)," Individual differences in working memory and comprehension: A test of four hypotheses", *Journal of Experimental Psychology: Learning, Memory, and Cognition*, Vol.19, No.1, pp.992-972.

12. Everett, J. J., Smith, R. E., & Williams, K. D. (2002)," Effects of team cohesion and identifiably on social loafing in relay swimming performance", *International Journal of Sport Psychology*, Vol.23, No.1, pp.311-324.

13. Ferster, C. B. & Skinner, B. F. (2004). Schedules of reinforcement, Appleton-Century-Crofts, New York, pp.24-34.

14. Frandsen, T.F. (2005), "Journal Interaction: A Bibliometric Analysis of Economics Journals", *Journal of Documentation*, Vol. 61, No. 3, pp. 385-401.

15. Garfield, E. (1964), "Science Citation Index: a new dimension in indexing", *Science,* Vol. 144, No.2, pp. 649-654.

16. Garfield, E. (1977), "Citation frequency as a measure of research activity and performance", *Current contents*, Vol. 31, No. 5, pp. 5-7.

17. Goldringer, S. D. (2006). "Words and voices: Episodic traces in spoken word identification and recognition memory", *Journal of Experimental Psychology: Learning, Memory, and Cognition,* Vol.22, No.1, pp.1166-1183.

18. Guha, B. (2005), *Documentation and Information: Services Techniques and Systems*, World Press, Kolkata, pp. 257-282.

19. Haridasan, S. and kulshrestha, V.K. (2007), "Citation Analysis of Scholarly Communication in the Journal Knowledge Organization", *Knowledge Organization,* Vol. 56, No. 4, pp. 299-310.

20. Haycock, L.A. (2004), "Citation Analysis of Education Dissertation for Collection Development", *Library Resources and Technical Services*, Vol. 48, No. 2, pp. 102-106.

21. Hertzen, D.H. (2003), "Bibliometric history", in Drake, M.A. (Eds.), *Encyclopedia of Library and Information Science*, 2nd ed., Marcel Dekker, New York, Vol.1, pp. 317-322.

22. Huang, H.M. (2003), "The Relationship of Journal Productivity and Citations: In The Case Of Library and Information",

Bulletin of the Library Association of China, Vol. 20, No. 1, pp. 209-225.

23. Ibid, pp. 228.

24. Ibid, pp. 45-47.

25. Ibid, pp. 71-84.

26. James William (1890), The Principles of Psychology: *An internet resource developed by Christopher D. Green, York University, Toronto, pp.230-240.*

27. Kessler, M.M. (1963), "Bibliographic coupling between Scientific papers", *American Documentation,* Vol. 14, No. 1, pp. 10-11.

28. Koley and Sen (2008), "Impact Factor: A Controversial Way", *Journals and Research Quality Measurement,* Vol.112, No.4, pp. 542-651.

29. Kristen B.Labonte (2009),"Citation Analysis: A method for collection development for a rapidly developing field", *Science and Technology Librarianship,* Vol.45, No.1, pp. 266-340.

30. La Bonte, K.B. (2000), "Citation Analysis: A Method for Collection Development for A Rapidly Developing Field", *Issue in Science and Technology Librarianship,* Vol. 44,No.2, pp.51-60

31. Maheshwarappa, B.S. (1997), "Bibliometric: An Overview", in Devrajan, G. (ed.), *Bibliometric Studies,* Ess, New Delhi, pp. 25-32.

32. Mahrana, B., Kalpana, N. and Sahu, N.K. (2001), "scholarly use of web resources in lies research: A Citation Analysis, *Library Review,* Vol. 55 No. 3, pp. 598-607.

33. Martyn, J. (1975), "Citation analysis", *Journal of Documentation,* Vol. 31 No. 1, pp. 250-297.

34. Mathew. V .George, PhD (2004, "*A Short History of Indian Psychology," Indian Journal of Social Psychology,* Vol.12, No.1, pp.121-232.

35. Mie Humen, J. and Nieminen P. (2000), "The effect of statistical methods and study reporting characteristics on the number of citation: a study of four general psychiatric journals", *Scientometrics,* Vol. 53 No. 3, pp. 377-388.

36. Nebelong-Bonneview, E. and Frandsen, T.F. (2006), "Journal Citation Identify and Journal Citation Image: A Portrait of the Journal of Documentation", *Journal of Documentation,* Vol. 62 No. 1, pp. 385-401.

37. Noruzi, A. (2007), "The Web If: A Critical Review", *Electronic Library,* Vol. 24, No. 4, pp. 490-500.

38. Pritchard, A. (1969), "Statistical bibliography or bibliometrics", *Journal of Documentation,* Vol. 25,No.2, pp. 348-349.

39. Ravi Chandra Rao, I.K. (1983), Quantitative Methods for Library and Information Science, Wiley Eastern, New Delhi, pp. 194-201.

40. Saeed Roohani and Zhao Xianming (2009), "Xbrl Citation Analysis: A Decade of Progress and Puzzle", *Journal of American Medicine Association*, Vol.293, No.19, pp. 298-320.

41. Sinn, R.N. (2001), "A Local Citation Analysis of Mathematical and Statistical Dissertations", *Science and Technology Libraries*, Vol. 25, No. 4, pp. 274-285.

42. Small, H. (1973), "Co-citation in the scientific literature: a new measure of the relationship between two documents", *Journal of the American Society for Information Science,* Vol. 24, no. 3, pp. 265-269.

43. Small, H. (2000), "Why Authors Think Their Papers Are Highly Cited", *Scientometrics*, Vol. 60 No. 3, pp. 305-316.

44. Taher, M. (1997), Studies in Librarianship, Anmol Publications, New Delhi, pp. 9-12.

45. Tiwari, A. (2006), Bibliometric Informetrics and Scientometrics: Opening New Vistas of Information Science, RBSA publications, Jaipur, pp. 7-29.

46. Walcott (2000), "Citation analysis as a tool", *Journal evaluation Science 1972,* Vol. 178, No. 4060 (3 November): pp.471-479.

47. White, E.C. (1985), "Bibliometrics: from Curiosity to convention", Special *Libraries,* Vol. 76 No. 1, pp. 32-38.

48. Williams, V.K. and Fletches, C.L. (2000), "Materials Used by Master's Students in Engineering and Implications for Collection Development: A Citation Analysis", *Issues in Science and Technology Librarianship*, Vol. 45, No.4, pp. 340-520.

49. Yang, H (2005), "The features of papers and citation analysis of eleven journals in tropical medicine", *Science American Medical Review*, Vol. 25, No. 1, pp. 23-41.

50. Yeh, N. (2002), "Impact Factor: A Controversial Way of Journals and Research Quality Measurement", *Journal of Library and Information Science*, Vol. 31 No. 1, pp. 54-62.

51. Zhiqiang, WU (2001), "Investigations on the Accessibility of Online Citation in Chinese Academic Journals", *Journal of the China Society for Scientific and Technical Information*, Vol. 25 No.1, pp. 80-86.

WEB REFERENCES

1. *en.wikipedia.org/wiki/Aligarh_Muslim_University*
2. www.psychology.org/
3. www.splut.com/sub/g/general-phsycology.html
4. www.psychologytoday.com/
5. http://www.wikipedia.org/wiki/citation_analysis.
6. http://www.gsli.utexas.edu/
7. http://www.libries.curtin.edu.au/
8. http://www.dspace.nitle.org
9. http://www.cybermetrics.cindoc.csic.es
10. http://www3.interscience.wiley.com
11. http://www.freespace.virgin.net
12. http://www.garfieldlibrary.upenn.edu/